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The Salmon Canning Industry

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PREFACE

The fisheries are one of Oregon's important natural resources. Conservative estimates place the annual value of the fisheries to the State at approximately ten million dollars, of which fully three-fourths is contributed by the salmon industry. The problem of obtaining the fullest use of this natural resource, and at the same time of conserving similar benefits for posterity, is now one of the major problems facing the State.

Little attention has been given, thus far, to an economic survey of the Oregon fishing industry. The information acquired from such a study would be of material aid in developing a policy of conservation and in marketing Oregon's fishery products on a nation-wide scale. The present monograph, though it relates to the salmon industry in a wider area, contributes, in a measure, to the goal desired.

The work of preparing the original manuscript on this study was completed at the University of California (Berkeley), where it was submitted in part fulfillment of the requirement for a degree of doctor of philosophy. Members of the staff of Oregon State College, on reading the original manuscript, and others interested in the salmon industry, encouraged me to extend the study and to submit the manuscript for publication in the Monograph series.

Professor R. E. Dimick, head of the department of Fish and Game Management, and Assistant Professor Thomas Onsdorff of the department of Food Industries, both of Oregon State College, reviewed the material and made helpful suggestions for improvement. The active interest taken in this project by Dr. E. C. Gilbert, chairman, and Mr. Edwin T. Reed, secretary, of the Publications Committee of the Oregon State Monographs, is responsible, in no small measure, for the fact that this work has reached the stage of publication.

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The Salmon Canning Industry

INTRODUCTION

The salmon industry is a regional industry. It is confined to a fairly definite geographical area bordering the Pacific Ocean on the mainlands of North America and Asia. Canneries are located in the states of Oregon and Washington, the province of British Columbia, the Territory of Alaska, and in Japan and Siberia. In the United States and Alaska, the value of the annual canned-salmon pack exceeds the combined total of all other edible canned-fishery products. In the past six years, the value of the salmon pack has varied between 56 million dollars in 1929 and 26 million dollars in 1932. In 1934, the pack was estimated at approximately 50 million dollars.¹ Alaska produces between 75 and 85 per cent of the annual output. The number of salmon canneries operated on the Pacific Coast has varied between 164 and 290, while the number of persons employed has sometimes equalled 20,000. In physical volume, the annual salmon pack has fluctuated between 250 million and 600 million pounds annually since 1929.

This study of the salmon-canning industry has particularly emphasized the evolution of the present marketing structure and contemporary marketing problems, principally in North America. The primary purpose of the study is to analyze the present marketing structure in the canned-salmon industry in light of those factors which predominantly influence the methods of marketing the commodity.

In the first place, the physical characteristics of the salmon are examined to determine its adaptability to various methods of marketing. The conditions under which production is carried on; i.e., the location of canneries with respect to the supply of raw material and the markets, the size of the salmon pack, the size of the canneries, the number of canneries, the production technique, production costs, capacity in relation to output, methods of financing, types of business organizations, the relation of the salmon-packing industry to the canned-foods industry generally, and the extent of concentration of ownership are examined with respect to their influence on the manner of marketing the commodity. The second step is to investigate the conditions of demand. This entails a study of the market for the commodity, the buying habits of the consumers, and the place of canned salmon in the diet. The third phase of the study is concerned with the marketing methods adopted as a re-

¹ Based on the opening-price quotations of the packers.

sult of conditions existing in the system of production and in the market. Such problems as selling commissions, sales promotion, trade cooperation, trade controversies, and pricing comprise an integral part of this section. The "Code of Fair Competition for the Canned Salmon Industry" provides a focal point for a survey of the efforts within the industry to control production and marketing policies.

Throughout the entire study, consideration is given to the historical and traditional influences which have tended to affect the present-day trade practices.

Though the salmon-canning industry has long been of interest to the public as well as members of the trade, no systematic study of the marketing structure in the industry has been made. The available historical material lacks continuity, while the Bureau of Fisheries has confined its activities to problems pertaining to the maintenance of the supply of salmon. The Bureau of Fisheries has done excellent work in collecting and publishing data relating to the production of salmon, and the reports on the biological investigations sponsored by this agency are valuable contributions to the field of aquatic biology. On the subject of canned-salmon marketing, the report of the Federal Trade Commission on Canned Salmon (1918) was the only study available. This report gives a brief statement of specific aspects of canned-salmon marketing; however, the general purpose of the report necessarily limited the scope of the investigation.

In gathering material for this study, contacts with members of the industry were of primary importance. Interviews were secured with numerous officials of sales agencies and salmon-canning companies, as well as with canner workers and fishermen. Wherever possible, the historical material was taken from original manuscripts in the Bancroft collection on western history.³ For statistical data, the *Pacific Fisherman*, the *Western Canner and Packer*, and the Bureau of Fisheries documents proved valuable.

I. THE SALMON INDUSTRY BEFORE 1864

TRADING COMPANY ACTIVITIES

Although Indian folklore is replete with tales of the salmon, our concern is largely with the development of the salmon fisheries after the coming of the white man.

The story of the salmon industry during the first half of the nineteenth century is bound very closely to the history of the territorial expansion of the

³ Bancroft Library, University of California, Berkeley.

United States and England. The commercial exploitation of the Oregon country and Canada during this early period was confined largely to the Hudson's Bay Company and the Northwest Company.

These two trading concerns,³ primarily engaged in fur-trading, were forced to supplement their food supply at the trading posts with smoked and dried salmon purchased from the Indians. The abundance of fish in the coastal streams soon led the company factors to experiment with methods of preparing salmon for marketing purposes, to be sold through trade channels established for furs.

METHODS OF MARKETING

With such crude methods of preservation as salting, pickling, and smoking, the company factors had difficulty in placing a satisfactory product on the foreign markets. Frederick Merk cites a letter written on July 22, 1824, by the "Governor and the Committee" of the Hudson's Bay Company to George Simpson, one of its factors, protesting the quality of salmon received in England.⁴ Although the next shipment was somewhat improved, the trade failed in England.

By 1824, the salmon trade with the Orient had become an accepted fact, and early records disclose that a trade had developed with some of the Pacific Islands and South America, in exchange for crude sugar, molasses, and salt.

In this early period, the traders experienced no end of trouble. Though a plentiful supply of fish was available, and a satisfactory method of preserving had been found, other problems remained. Salt and barrels were equally scarce. In many cases salmon was permitted to remain in pickle for only 48 hours prior to smoking in order to save the supply of salt.⁵

THE MARKET FOR THE PRODUCT

The Hudson's Bay Company and the Northwest Company were far more successful in their salmon trade with the Orient and South America than they were with England. By 1835, the cured-fish trade between Fort Langley, Vancouver, and the Hawaiian Islands absorbed from 3,000 to 4,000 barrels of salmon annually.⁶

³ The charter of the Hudson's Bay Company permitted it to engage in fishing activities as well as fur trading. The Northwest Company was not chartered by the English Crown. This company was created by a group of Montreal merchants who desired to share in the profits of the Canadian fur-trading business which had been monopolized by the Hudson's Bay Company since its creation in 1670.

⁴ *George Simpson's Journal*, p. 121-122. Edited by Frederick Merk. Harvard University Press, 1931.

⁵ *Journal of Fort Langley*, p. 145. Original manuscript in Bancroft Library.

⁶ *Bancroft's History of Washington*, p. 249.

As the possession of the salmon passed from the Indian fishermen to the trading company, the fish was processed in the trading post and carried on company ships to foreign countries, where it was marketed by company stores or by other tradesmen.

EFFORTS TO COMPETE WITH THE TRADING COMPANIES

While the two trading companies dominated the export as well as the local markets, as early as 1840 independent merchants at Oregon City and other settlements on the Willamette and Columbia Rivers made shipments of cured fish to Honolulu.⁷

Nathaniel J. Wyeth,⁸ a New Englander, with the aid of several missionaries, attempted to establish himself in the salmon-trading business in Oregon. Although Wyeth was backed by a group of Boston financiers, this venture and a second one proved failures. Inexperience, sea disaster, trouble with the natives, and the keen competition from the Hudson's Bay Company haunted the party throughout. It was not until 1846, when the Oregon boundary question was settled between the United States and England, that the independent traders were able to make any headway in the salmon-trading business.

In California, the Hudson's Bay Company never gained a foothold in the fishing trade. It was not until 1842 that Simpson made his tour of the company posts and subsequently made an agreement with the Spanish authorities in California to establish a trading center in San Francisco.

II. THE SALMON INDUSTRY AFTER 1864

NEW METHODS OF MARKETING

Early methods of conserving salmon included drying, pickling, salting, and smoking. Two new developments, freezing and canning, produced fundamental changes in the trade as a whole.

FREEZING

Ice packing had been common in Europe for some years, but it was not until 1888 that a method for freezing fish was perfected. Ice packing is used widely at present for marketing all fish in nearby markets, and is being used satisfactorily for distant shipments. For storage purposes and supplying mar-

⁷ Wilkes, Charles. *Narratives of the U. S. Exploring Expedition*, pp. 369-370. Lee and Blanchard, Philadelphia, 1843.

⁸ *Bancroft's History of Oregon*, pp. 730-731.

kets during off-seasons, freezing has proved most satisfactory. As long as fish remains frozen, it can be preserved almost indefinitely.⁹

The discovery of a method of freezing salmon had unusual possibilities. Undertaken at first to supply local dealers, soon distant markets were sought. At present there is hardly a town in western Europe where frozen salmon of the Pacific cannot be purchased.¹⁰

CANNING

Canning as a method of preserving salmon for market purposes came about sixty years after Nicholas Appert,¹¹ a Frenchman, successfully used glass containers to preserve foods of various kinds. In 1810, a patent was granted Peter Durrand in England for preserving fruits, meats, and vegetables in tin cans, and in 1823 the French Government made a similar grant to Pierre Antoine Angilbert. Because of the technical difficulties of can manufacture,¹² tin cans were not successfully utilized for canning any form of fish until 1839, when they were used in Delaware to pack oysters.¹³

On the west coast, canning was first used as a means of preserving fruits, and by 1860 California had developed an export trade in this industry. Salmon canning began on April 1, 1864, when Andrew S. Hapgood, George W. Hume, and William Hume set up a cannery on the bank of the Sacramento River at Washington, Yolo County, California.

Despite the many difficulties caused by the crude canning machinery in their plant, Hapgood, Hume and Company were able to can 2,000 cases of salmon in 1864, and another 2,000 in 1865. Becoming discouraged at the apparent shortage of fish, the group transferred its activities to Eagle Cliff, Washington, on the north bank of the Columbia River. R. D. Hume later wrote of the trials of the founders of the Sacramento River cannery as follows:¹⁴

At least fifty per cent of the product spoiled at the cannery from the effect of defective work as we had at that time no process for testing

⁹ U. S. Tariff Commission, *Report 69*, p. 37. Salmon, as landed by the fishermen, is classified as fresh fish regardless of its subsequent use. There is, however, the fresh-salmon trade which does not process the fish but simply sells it locally or, after packing in crushed ice in wooden boxes, ships it for table use. Frozen salmon is the fresh fish subjected to a low temperature long enough to freeze the innermost tissues. When properly frozen and carefully packed, the average consumer cannot distinguish it from the fresh fish if used immediately upon being thawed. Soon after thawing, however, the flesh becomes soft. In recent years, part of the production has been prepared by advanced methods which reduce the extent of the softening.

¹⁰ U. S. Bureau of Fisheries Document 1092, p. 541. 1930.

¹¹ Appert, Nicholas. *Livres de tous les menages, ou L'art de conserver, pendant plusieurs, annees*. Pub. sur l'invitation de S. exc. le Ministre de l'interieur, 1810.

¹² Duckwall, E. W. *Canning and Preserving*, Pittsburg Printing Company, 1905.

¹³ Canning Industry, *Encyclopedia of Social Science*.

¹⁴ Hume, R. D. *The Salmon of the Pacific*. Bancroft Library. Pamphlets on California, Volume 2, p. 14. 1893.

leaks. . . . To these troubles were added the difficulty of disposing of that part of the product that was good; the article being new to the merchants of San Francisco, they would have nothing to do with it for a long time, . . . Just at the darkest moment, a San Francisco merchant advanced shipping charges on the lot and found a market at good prices.

INDUSTRY SHIFTS TO THE NORTHWEST AND ALASKA

Following the moving of the Hapgood, Hume and Company cannery to the Columbia River, canning activities ceased on the Sacramento until 1874, when several canneries were opened and a general upward swing in the packing activities took place until 1883. That year 200,000 cases of salmon were packed on the Sacramento River, but its canning operations tended to diminish rapidly until all canneries were closed in 1919.

The rapidity with which the salmon-packing industry moved northward along the Pacific slopes is more clearly brought out in the chapter on Production.

COMPETITION BETWEEN SACRAMENTO AND COLUMBIA RIVER PRODUCERS

When cannery operations on the Sacramento River were resumed in 1874, the producers were faced with two kinds of competition; namely, (1) the fresh-salmon trade in San Francisco, which paid higher prices to fishermen than the producers could meet, and (2) the output of the Columbia River canning companies, whose main item of cost was reduced to a minimum because of the abundant supply of fish.

A third factor which contributed materially to the decline in the importance of the Sacramento River salmon-canning industry was the indifferent reputation of the Sacramento product.¹⁵ Gilbert accounts for the poor reputation with the statement that¹⁶

Those packing in San Francisco had their fish shipped down the river by steamer or schooner, and the salmon were often old and unfit for canning before they were delivered. This was particularly true toward the last of the season, when the fish could only be caught well up the river.

The following statistical recapitulation, reprinted from the *Tenth Census* reports in the Bureau of Fisheries documents, illustrates the extent to which the salmon industry had moved north by 1880, as well as the sources of competition for the California canneries:

<i>Statistics of Pacific Salmon Fishery and Canning Industry for 1880</i>	
Number of persons employed.....	8,310
Capital invested	\$1,381,900
Value of product	\$3,399,574

¹⁵ Jordan, D. S. and C. H. Gilbert. *The Salmon Fishing and Canning Interests of the Pacific Coast*. The Fishery Industry of the United States, Volume 5, p. 733. 1884.

¹⁶ *Ibid.*

The total catch was 2,887,900 salmon, weighing 53,844,000 pounds. Of this amount, 1,585,500 pounds were salted, 200,000 pounds smoked, 2,000,000 pounds sold fresh at San Francisco, 43,379,542 pounds canned, and the rest consumed locally or unaccounted for.

The extent of the canning industry was as follows:

Table 1. PACIFIC SALMON-CANNING INDUSTRY IN 1880

Location	Canneries			Sold to Canneries		Products of the canneries	
	No.	Capital	Em- ploy- ees				
				<i>Pounds</i>	<i>Value</i>	<i>Cases</i>	<i>Value</i>
Sacramento	10	\$ 100,000	800	5,305,000	\$ 79,600	80,387	\$ 400,935
Smith, Eel, Rogue and remainder of Oregon	2	25,000	95	1,591,800	15,918	22,300	111,500
Columbia River	29	1,100,000	4,000	35,612,742	809,380	539,587	2,697,930
Puget Sound	1	4,000	15	198,000	1,500	3,000	15,000
Alaska	2	10,000	30	672,000	3,360	10,000	30,000
Total	45	\$1,239,000	4,940	43,379,542	\$909,818	655,274	\$3,255,365

SAN FRANCISCO PROVIDES CONCENTRATION POINT FOR SALMON PACK

San Francisco, in this early period of the commercial fishing trade, was the most important outlet on the Coast for fresh and canned salmon. David Starr Jordan stated¹⁷ that all of the salmon exported (except that shipped directly from Astoria) passed through the hands of San Francisco dealers.

During the period from 1874 to 1890 brokers and wholesale firms began to turn their attention to the possibilities for marketing canned salmon. Such business was generally conducted as a part of a general brokerage business connected with the grocery trade, a relationship which has continued to exist.

DISTRIBUTION FACILITIES DEVELOP IN NORTHWEST

Development of facilities to care for the northwest salmon pack and of agencies to market the product followed closely the establishment of the canning industry in that area. A corresponding shift in related businesses developed primary markets in Seattle, Portland, and Vancouver, B. C., as well as in San Francisco.

DIFFICULTIES FOUND IN ESTABLISHING MARKET

The establishment of a market for canned salmon was not easy. Consumers' reluctance to try the new product resulted in merchants declining to

¹⁷ Jordan, D. S. *The Fisheries of the Pacific Coast*. Report of the Fishery Industry of the United States. Edited by G. B. Goode. Vol. 2, p. 608. United States Government Printing Office, 1884.

purchase large quantities. The trouble incurred in placing salmon on the English market provides a significant contrast to later developments in the salmon trade in that country. The wholesale firm of Pelling, Stanley & Company, London, became the marketing agents for the Pacific Coast canned salmon in the early seventies. The experiences of this firm were related in a letter of Mr. Pelling to Robert Hume, one of the packers. Mr. Hume tells of the contents of the letter as follows:¹⁸

I well remember the story of Mr. Pelling in respect to his experience with the first lot of 500 cases of salmon that he had purchased—of his efforts to get his customers to take a few cases for trial, and his arguments to them that salmon were to furnish Great Britain a cheap and nourishing food for her laboring population—his failure to get buyers to take hold of a new good, and his daily walks around the pile of cases to see if any had been disposed of; his discouragement when observing that, though a long time had elapsed, the pile seemed as large as ever.

The same difficulty was experienced elsewhere. Consumers were slow to accept the new product.

The canned-salmon output of the Columbia River district prior to 1885 was marketed largely in England. The San Francisco and New York markets also accounted for sizable orders. By 1892, the English market absorbed about 450,000 cases of red salmon annually.

The heavy English trade prior to 1883 is accounted for by the fact that water transportation constituted the only satisfactory means for placing the canned goods on the market in populated areas, and by the fact that other commodities produced in the northwest were marketed in England. By 1884, the salmon packers were sending "a large portion of the pack . . . by rail,"¹⁹ particularly from the Columbia River and Puget Sound districts."

SALMON PACKERS USE ESTABLISHED MARKETING OUTLETS

Since the canned-salmon business was not large enough to warrant the establishment of independent channels of distribution, wholesale grocers and food brokers supplied the available outlet for the annual salmon pack, many of them becoming financially interested in salmon canneries at an early period. In most cases the reputation of these two agencies was far greater than that of the salmon packer, thus making the marketing less difficult.

¹⁸ Hume, R. D. *The Salmon of the Pacific*, *op cit*.

¹⁹ *Commercial Herald*, May 1, 1884. Published in Portland, Oregon. The Northern Pacific Railway line was completed between Chicago and Puget Sound in 1883. The Oregon Railway and Navigation Company between Spokane, Washington, and Portland, Oregon, was in operation by 1884.—Stuart Daggett, *Principles of Inland Transportation*, p. 70. (Harper's) 1928.

INCREASING COSTS AND LOW PRICES

As a result of overfishing, the yield from the Sacramento and Columbia Rivers continued to diminish in proportion to the capital and labor expended. By 1884, costs had increased by leaps and bounds as canneries were forced to purchase fish from independent fishermen. Other costs were rising rapidly, but it was difficult to add such increases to the retail price of the commodity. During the years from 1866 to 1883, statistics²⁰ show that the price paid to fishermen for salmon increased 600 per cent, and the market price decreased 69 per cent. The value of the annual pack increased from \$32,000 to \$3,257,-790, or slightly more than 100 times.

CONSUMER RESISTANCE TO PRICE INCREASES

Attempts made by canners to increase the price of canned salmon in order to absorb part of the added costs of production met with stiff opposition. "The San Francisco Merchant" reported that canned salmon "is going off very slowly, for though stocks are not large in the East, yet it was expected that salmon would be cheaper this year, and it is hard to make our Eastern friends get over the idea of cheap salmon."²¹

OPPOSITION TO MACHINE-FILLED CANS

Every effort was made by the packers to reduce costs of production. Where possible, improved machinery was introduced. Some of the innovations, though successful in decreasing costs, met with the opposition of consumers, particularly when the canners on the Columbia River installed machinery to fill the cans. Purchasers were able to distinguish easily between hand- and machine-filled cans. Although there was little difference, if any, in the taste of the contents of the can, it did make a material difference in the appearance of the product. Complaints from the English trade were so strong that several packers in the Astoria district returned to hand filling.

PERIOD OF EXPANSION OF THE SALMON FISHERIES

By 1895, the salmon industry began to assume an important place in the industrial activity on the Pacific Coast. The increasing importance of the Puget Sound and Alaska fisheries was particularly noticeable after that year. The Spanish-American War and the Russo-Japanese War provided golden opportunities for packers to market Sockeye salmon.²²

²⁰ *San Francisco Merchant*, April 18, 1884, p. 25.

²¹ *Ibid.*, p. 179, May 20, 1884.

²² *The Position of San Francisco in the Canned Salmon Trade*. J. K. Armsby Company, San Francisco, 1904. Bancroft collection.

OVERPRODUCTION BRINGS REORGANIZATION MOVEMENT

Overdevelopment followed soon after the first cannery was located on the Columbia River. Competition and the apparent decrease in the supply of fish resulted in a movement for consolidation of the canneries in that area. The trend toward combining operating units became noticeable in 1885 when the Eureka and Epicure Packing Company was organized to take over three companies operating canneries at that time.

The formation of the original Columbia River Packers Association in 1887 to include eight companies provided the industry with the first successful landmark in the organization of producing companies.

In the Puget Sound district the consolidation movement started a few years later. The Pacific Packing and Navigation Company, incorporated in 1902 under the laws of New Jersey, consolidated 16 canneries operating in Puget Sound and Alaska. The following year the concern applied for a receiver and was subsequently reorganized.²³ The same year, the Pacific American Fisheries was organized under the New Jersey laws, but in 1905, its charter was voided for nonpayment of taxes.²⁴

BRITISH COLUMBIA EXPANSION

The first salmon cannery in British Columbia was erected at Anniesville in 1870.²⁵ Shortly thereafter, the firm of Lane, Pike, and Nelson attempted to can whole Sockeye salmon, but was unsuccessful because of the impossibility of obtaining a satisfactory method of sealing the containers.²⁶

In 1879, only nine canneries operated on the Fraser River, but by 1901, 78 canneries were located on this river and other rivers in this region. They packed a total of 1,247,212 cases of salmon, or an average of approximately 15,990 cases for each plant.

Overproduction during 1900, 1901, and 1902 was reflected in the opening prices of Sockeye salmon. The number of operating plants decreased to 69, 61, and 51, respectively, during the three-year period from 1902 to 1904, and the opening price was raised to \$5.75 a case.

It was during these depression years that the consolidation movement in the industry started in Canada. The British Columbia Packers Association was organized in 1902 to include 29 canneries on the Fraser River, and 12 in the northern part of the Province. Subsequent changes were made in 1914,

²³ *Moody's Manual of Corporation Securities*, 1903, p. 1594.

²⁴ *Obsolete American Securities and Corporations*. Volume 2, p. 795. R. M. Smythe, Produce Exchange, New York, 1911.

²⁵ *Salmon Fishery of British Columbia*, p. 3. Ministry of Fisheries, Ottawa, 1931.

²⁶ Bureau of Fisheries Document 1092, p. 471, *op. cit.*

Table 2. CANNERIES OPERATED IN ALASKA

Year	Southeast	Central	Western	Total
1878	2	---	---	2
1879	2	---	---	2
1880	1	---	---	1
1881	1	---	---	1
1882	1	2	---	3
1883	4	2	---	6
1884	4	2	1	7
1885	3	2	1	6
1886	4	2	3	9
1887	5	2	3	10
1888	6	6	4	16
1889	12	21	4	37
1890	12	19	4	35
1891	11	14	5	30
1892	7	6	2	15
1893	8	11	3	22
1894	7	10	4	21
1895	7	10	6	23
1896	9	12	8	29
1897	9	13	7	29
1898	9	14	7	30
1899	9	14	9	32
1900	16	14	12	42
1901	21	13	21	55
1902	26	12	26	64
1903	21	12	27	60
1904	12	11	32	55
1905	13	9	25	47
1906	20	8	19	47
1907	22	8	18	48
1908	23	8	19	50
1909	19	8	18	45
1910	23	10	19	52
1911	32	11	21	64
1912	51	14	22	87
1913	42	14	23	79
1914	44	14	23	81
1915	46	17	24	87
1916	54	19	27	100
1917	62	27	29	118
1918	76	29	30	135
1919	76	30	28	134
1920	82	36	28	146
1921	30	25	28	83
1922	57	36	30	123
1923	65	37	28	130
1924	65	37	28	130
1925	62	37	30	129
1926	61	43	28	132
1927	62	44	29	135
1928	61	62	30	153
1929	59	70	30	159
1930	57	68	27	152
1931	41	49	25	115
1932	31	34	22	87
1933	38	31	23	92
1934	47	45	22	114
1935	46	44	9	99
1936	46	46	24	116
1937	45	47	24	116

when the company was reorganized as the British Columbia Fishing and Packing Company, Limited.

The development of the British Columbia salmon-canning industry has coincided very closely with the growth of the industry south of the border. Comparative figures show that the disparity between opening prices of salmon in the United States and those in Canada have been of minor importance.

ALASKA EXPANSION

The first salmon cannery in Alaska was established at Klawak in 1878 by the North Pacific Trading and Packing Company. Two canneries were operated in that section during the following year; only one of them survived, however, through the seasons of 1880 to 1882. Two canneries were built in central Alaska during 1882, and by 1884 a cannery had been established in western Alaska.

The rapidity with which the Alaska salmon fisheries were developed into the territory's leading industry can be best illustrated by showing the annual census of canneries in each of the three districts since the inception of the industry.²⁷

As figures in Table 2 indicate, the big increase in number of salmon canneries took place during, and immediately following, the World War. The expansion of the salmon market during a period of a shortage of all foods resulted in an immediate expansion of production facilities. The remainder of this discussion will be taken up under the chapter on Production.

III. CLASSIFICATION OF SPECIES

STUDIES MADE BY EARLY WRITERS

In 1653, Izaak Walton discussed the salmon (Atlantic salmon) in the rivers of Scotland. Although rather superficial, many of his observations coincide quite closely with later scientific writings.²⁸

As early as 1737, George Wilhelm Steller, a German scientist, who had traveled extensively in Siberia, recognized and described the species of fish known today as salmon.²⁹ In 1760, Antoine Goüan, a French naturalist, described the external and internal characteristics of the salmon. It remained,

²⁷ Bureau of Fisheries Document 1092, pp. 572-573. *op. cit.*

²⁸ Walton, Izaak. *Compleat Angler*, pp. 133-9. First edition. Reproduction from the Grenville Collection at the British Museum. A. and C. Black, Ltd., London, 1928.

²⁹ Steller, George Wilhelm. *Beschreibung von dem lande Kamtschatka, dessen einwohnern, deren sitten, nahmen, lebensart und verschiedenen gewohnheiten*, hrsg. von J. B. S. mit vielen kupfern. Frankfort-Leipzig, 1737, by J. G. Fleischer.

however, for Johann Julius Walbaum,³⁰ a German, to designate the various species of salmon with the Russian vernacular terms that have since been accepted by students of ichthyology.

Other writers in the eighteenth and early nineteenth centuries designated their species with different names, but none of them were able to give truly distinguishing characteristics of the various species.³¹

SPECIES OF SALMON FOUND IN PACIFIC AREA

Subsequent investigations seem to indicate that there are at present five distinct species of salmon (*Oncorhynchus*) in the Pacific Ocean and the rivers flowing into it.³² John N. Cobb, formerly Dean of the College of Fisheries at the University of Washington, lists them as follows:³³

1. *Oncorhynchus tshawytscha* (Walbaum). This species is frequently classified by the trade as Tyee, Quinnot, Chinook, Spring, or King salmon.
2. *Oncorhynchus nerka* (Walbaum). The trade names for this salmon are the Red, Sockeye, or Blueback salmon.
3. *Oncorhynchus kisutch* (Walbaum.) This salmon is often referred to as either the Silver, Coho, or Medium Red salmon.
4. *Oncorhynchus keta* (Walbaum). This species is referred to as the Chum or Dog salmon by the trade.
5. *Oncorhynchus gorbuscha* (Walbaum). The most common designation for this species in commercial circles is Pink salmon.

CHINOOK OR KING SALMON *Oncorhynchus tshawytscha* (WALBAUM)

A descriptive study of the *Quinnat* or *California* salmon was made by David Starr Jordan in 1884.³⁴ The Chinook, though found in practically all waters flowing into the Pacific, is most abundant in the Columbia River, where it constitutes approximately 75 per cent of the canned pack. The fresh-fish trade offers the principal market for the Chinook salmon over the coast as a whole. Its fine flavor, and its tender, flaky texture have placed it in general favor with the consuming public. Both fresh and canned Chinook salmon bring highest prices.

³⁰ Walbaum, Johann J. *Revision of Jacob Klein's Ichthyologia Enodata*. Leipzig, 1793.

³¹ *Fifth and Sixth Annual Report, Fish and Game Protector of Oregon*, p. 81. 1913.

³² Publications of the U. S. Bureau of Fisheries and many other reports of equal value are available in scientific collections dealing with this phase of our problem. Many of these publications are written by Charles H. Gilbert, F. M. Chamberlain, David Starr Jordan, B. W. Evermann, and E. L. Goldsborough, all of whom are well known for their work in this field of biology.

³³ Bureau of Fisheries Document 1092, p. 411. *op. cit.*

³⁴ *The Fishery Industry of the United States*. U. S. Commission of Fish and Fisheries, pp. 480-81. Edited by G. B. Goode. Government Printing Office, 1884.

The color varies from a deep red to pink, though often pale or white-meated fish are found in the catch. Consumer preference for the red color necessitates strict grading and determines the value of the various packs.

The gradual shift of the canning industry to Puget Sound, British Columbia, and Alaska has caused this species to lose its dominant position in the canning trade to the Alaska Red or Sockeye salmon.

SOCKEYE OR RED SALMON *Oncorhynchus nerka* (WALBAUM)

This species, which appears as far north as the Bering Sea and as far south as the Sacramento River, now ranks above the Chinook in commercial importance. At present, the Sockeye is usually the most abundant species in Alaska and British Columbia. Its weight ranges from three to seven pounds, and it is noted for its deep red color and fine texture. On the market, the quoted price for Red or Sockeye is slightly lower than for Chinook.⁸⁵

SILVER OR COHO SALMON *Oncorhynchus kisutch* (WALBAUM)

The Silver or Coho salmon is less valuable to canneries because of its light color, although it has an excellent flavor and good texture. The average weight is five or six pounds and this species is found as far south as Monterey Bay.⁸⁶

HUMPBAC OR PINK SALMON *Oncorhynchus gorbuscha* (WALBAUM)

This species, packed under the trade name "pink salmon," has a wide export demand because of its lower market price. Competition from Japan and Kamtschatka has practically eliminated American canneries from export markets, particularly England, during recent years.^{87, 88}

CHUM OR KETA SALMON *Oncorhynchus keta* (WALBAUM)

This species (often called dog salmon) weighs from 8 to 30 pounds and has a light-yellow flesh which makes it undesirable for freezing, salting, or smoking. It is found in abundance in the waters of Puget Sound, British Columbia, and Alaska; also on the Eel River in California.

STEELHEAD TROUT *Salmo gairdnerii gairdnerii* (WALBAUM)

This species, which is a sea-going species of the rainbow trout, is principally utilized in the fresh and frozen market trade because its pale color and excessive cooking time render it undesirable for canning.⁸⁹

⁸⁵ *Pacific Fisherman*, Volume 32, No. 2, p. 109. January 25, 1933.

⁸⁶ *The Fishery Industry of the United States*. U. S. Commission of Fish and Fisheries, pp. 482-3. Government Printing Office, 1884.

⁸⁷ Interview with Mr. Morris Ratray, Manager, Anderson, Miskin Company, Exporters, Seattle.

⁸⁸ Bureau of Fisheries Document 1092, pp. 414-415. *op. cit.*

⁸⁹ *Ibid.*, p. 415.

SCIENTIFIC V. TRADE TERMINOLOGY

A nomenclatural conflict exists between scientists and members of the trade. The former group "classify as Salmonidae many fish not recognized by the trade as salmon; the trade restricts the name to five species of North Pacific salmon of the genus *Oncorhynchus*, the steelhead trout, and the Atlantic salmon."⁴⁰ For the reader's guidance, the following trade names applied to the species of salmon found on the Pacific Coast will be used.

1. *Chinook* will include Chinook, Spring, King, Tyee, and Quinнат.
2. *Sockeye* will include Sockeye, Red, Blueback, and Quinault.
3. *Coho* (medium red) will include Coho, Silver, and Silverside.
4. *Pink* will include Pink and Humpback.
5. *Chum* will include Chum and Dog.
6. *Steelhead*.

IV. STANDARDIZATION AND GRADING

STANDARDIZATION OF THE PRODUCT

Since the species of salmon are distinguished by varying physical characteristics and nutritive qualities, the industry and the courts have recognized a given species as representing a product of a certain standard of quality, allowing a certain elasticity in the classifications.

GRADING ACCORDING TO SPECIES

Except for Chinook salmon,⁴¹ the industry follows the policy of grading all salmon on the basis of species only. In addition to differences of color and

Table 3. COMPOSITION OF CANNED SALMON*

Species	Total solids	Fat	Protein	Ash	Food value per pound
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Calories</i>
Pacific salmon:					
Sockeye	35.22	11.22	20.80	1.23	860
Chinook	36.83	15.72	17.67	1.22	991
Coho	32.51	8.49	21.08	1.21	750
Pink	30.20	6.99	21.40	.76	696
Chum	29.96	6.69	20.67	1.02	514
Pacific steelhead trout	33.16	8.95	21.32	1.21	792
Atlantic salmon	35.70	12.49	21.14	1.22	920

* No appreciable difference is found between canned and fresh salmon, so the composition of canned salmon is used here.

⁴⁰ United States Tariff Commission. *Report on Fishery Products*. Report 69, p. 36. United States Government Printing Office.

⁴¹ Chinook salmon frequently vary from a deep red to a white-colored flesh; hence, the industry follows the policy of grading this species according to color.

texture, certain fundamental variations in the nutritive qualities of each of the species of salmon afford objective standards for measuring certain aspects of quality for marketing purposes.

The composition of the flesh of the various species of canned salmon and the relative food value of each species is illustrated in Table 3.⁴²

The relative percentage figures for fat and minerals in the various species differ slightly for fish caught in different areas, but the figures given above cover more samples than other experiments.

GRADING RESTRICTED BY A LACK OF ADEQUATE STANDARDS

No attempt is made in the industry to standardize certain aspects of quality. While it is not the policy of the industry in general to continue fishing operations beyond the time when the quality of the product is good, a few firms in the Puget Sound district pack appreciable amounts of the late run. Restrictions placed on operating time in Alaska forestall the greater part of the late-packing activity.

Salmon is sometimes canned in early stages of decomposition. While this is not injurious to the consumer's health,⁴³ it materially affects the quality. Most salmon canneries have no satisfactory inspection system; the degree of tolerance permitted in canning decomposed flesh is not clearly defined; and packers are frequently confused as a result of charges brought against them by the Government under the Pure Food and Drugs Act. Investigations have been conducted that disclose the principal factors causing salmon decomposition,⁴⁴ and to a certain extent the industry has attempted to control such factors by proper sanitation and rapid use of the fish for canning purposes.

LEGAL RESTRICTIONS

The Alaska Fisheries Law (1906), as amended in 1929, requires that salmon be processed within forty-eight hours after being killed. Dr. E. D. Clark, Secretary of the Association of Pacific Fisheries, testified in 1934,⁴⁵ that this is a maximum requirement and at times salmon must be canned within twenty-four hours to insure a good product and to avoid seizure by Federal food officials.

⁴² *Nutritive Value of Fish and Shellfish*. Bureau of Fisheries Document 1000. Washington, D. C., 1926.

⁴³ This is a point of disagreement. In the Federal Court decision of the U. S. v. 288 Boxes of Tullibees (F. & D. Notice of Judgment, 20,810), the court stated that "the aesthetic guide frequently precedes the scientific one and the Government might wisely ban food which runs counter to it in the categories mentioned."

⁴⁴ Fellers, Carl R. *Bacteriological Investigations on Raw Salmon Spoilage*. University of Washington Publications in Fisheries. Volume 1, No. 8, pp. 157-158.

⁴⁵ National Industrial Recovery Administration Hearing on the Code of Fair Practice and Competition. Presented by the Canned Salmon Industry. Volume 1, pp. 115-117. Jessie L. Ward, Official Reporter. February 24, 1934.

Although the law prohibits wanton waste or destruction of salmon in Alaska, large numbers of lower-grade fish such as Chums are nevertheless wasted, particularly when sufficient quantities of Alaska Reds are available.

STANDARDIZATION ONLY PARTLY ATTAINED

No attempt has been made by the industry to adopt regulations insuring quality from all canning plants. Any steps in that direction have been purely on the initiative of individual firms. A committee appointed by the Code Authority to study the questions of standardization and grading reported on November 2, 1934,⁴⁶ that special difficulties involved made desirable more intensive study.

STANDARDS ON WHICH CANNED SALMON MIGHT BE GRADED

In 1926, Fellers, Clark, and Clough published a study entitled "Canned Salmon: A Five-Year Correlation Study of Certain Quality Factors,"⁴⁷ basing their judgment on the following tests: (1) Odor (good, stale, tainted, and putrid); (2) Vacuum in cans; (3) Texture of flesh (firm, slightly soft, soft, and very soft); (4) Reddening of the flesh (slight and marked); (5) Pugh marks; (6) Honeycombing; (7) Liquor turbidity; (8) Friability of bones; (9) Sterility of cans; and (10) Indol.

Testing of canned salmon is done in the northwest branch laboratory of the National Cannery Association. Such services are available to members, and consequently do not cover the salmon pack of all packers.

LABELING AS TO SPECIES

The government has deemed the practice of designating species on labels of sufficient importance as a basis for grading to merit protection, and the industry attempted to make species markings more effective by incorporating certain restrictions in the Code for the industry. Continuous use of the names of species as a means of designating certain attributes of quality has met with minor public acceptance.

Attempts to enforce standards of quality and to protect the consumers from misbranding will be discussed in the ensuing pages.

V. ENFORCEMENT OF STANDARDS

ADULTERATION AND MISBRANDING

Violations of the Pure Food and Drugs Act of the Federal Government are roughly divided into three groups: (1) those affecting public health; (2)

⁴⁶*Pacific Fisherman*, Volume 32, p. 12, November 1934.

⁴⁷*University of Washington Publications in Fisheries*. Volume 1, No. 9, pp. 189-204. 1926.

those resulting from filth and decomposition; and (3) those involving an economic fraud. Federal authorities claim that 8.9 per cent of the efforts of the Food and Drug Administration were devoted to enforcement of the law in respect to fishery products, involving largely hygienic violations.

Economic fraud in the salmon industry is equivalent to misbranding the products. Lack of emphasis on this phase of the enforcement policy might account for the small number of charges placed against packers and selling agents for misbranding salmon products entering interstate trade.⁴⁸

Numerous samples examined each year are subjected to the careful scrutiny of chemists and bacteriologists, but examinations do not cover, and cannot disclose, unsanitary conditions existing within canneries. The Federal Food Administration recognizes the limitations under which it works and has made recommendations for improvements in the law. These factors will be discussed in subsequent pages.⁴⁹

EFFORTS TO ELIMINATE ADULTERATION AND MISBRANDING

The Federal Pure Food and Drugs Act was passed in 1906, although legislation pertaining to adulteration and misbranding of food products existed in some states before that. Lack of interest in these problems on the part of the industry has been general.

Some firms in the canned-salmon industry have placed the whole industry under suspicion by selling products unfit for human consumption and by untruthful labeling. Attempts to correct the abuses found in the industry have taken three forms; namely,

1. Federal legislation,
2. State legislation, and
3. Control within the industry.

FEDERAL LEGISLATION AND ITS ADMINISTRATION

The Pure Food and Drugs Act of June 30, 1906, specifically prohibited the "manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, . . ."⁵¹ As a result of some quarter of a century of experience, through interpretative court decisions,⁵² it has been necessary from time to time to amend the law to make it more inclusive and to eliminate certain weaknesses.⁵³

⁴⁸ *Report of the Chief of the Food and Drugs Administration*, p. 3. a Department of Agriculture publication. United States Government Printing Office, 1933.

⁴⁹ *Ibid.*, p. 7.

⁵¹ *United States Code*, Section 8, p. 622.

⁵² *Report of the Chief of the Food and Drugs Administration*, 1933. Pamphlet issued by the Department of Agriculture, 1933.

⁵³ Amendments of 1923, 1927, and 1933.

For the purpose of the present law, articles of food are deemed adulterated under Section 8 under the following conditions:

1. If they contain injurious mixtures of any kind that have been mixed or packed with the product "so as to reduce or lower or injuriously affect its quality or strength." (Paragraph 1)
2. If they have any substance submitted wholly or in part for the article. (Paragraph 2)
3. If any valuable constituents have been abstracted. (Paragraph 3)
4. If their damaged condition or inferiority has been concealed in any manner. (Paragraph 4)
5. If they contain any added deleterious ingredient that might injure the health of the user. (Paragraph 5)
6. If they consist in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food. (Paragraph 6)

Misbranding as used in the statute applies to "all articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substance contained therein which shall be false or misleading in any particular." (Section 9)⁵⁴

Food is deemed mislabeled or misbranded if any of the following conditions exist: (Section 10)

1. If it be an imitation of or offered for sale under the distinctive name of another article of food. (1)
2. If it be labeled or branded or colored so as to deceive or mislead the purchaser, or if it be falsely labeled in any respect. (2)
3. If the weight or measure is stated incorrectly. (3)
4. If false statements are made on label regarding ingredients. (4)
5. If the name of the manufacturer or selling agent is falsely stated. (5)
6. If the canned food falls below the standard of quality, condition, and/or fill of container prescribed by the Secretary of Agriculture under provisions of the 1933 amendment.⁵⁵

ADULTERATION

All of the charges of adulteration have been brought against the canned-salmon industry under Section 8, Paragraph 6, of the Federal Pure Food Law. The courts have had to consider the meaning of "adulteration" on many occasions; hence certain cases have established a precedent for actions brought under the provisions of the law. In 1914, the Federal District Court of Oregon ruled that the word "adulterated" implies addition of "filthy, decomposed or putrid substance" by nature, as well as by human agency.⁵⁶

A similar line of reasoning was followed by the Appellate Court in the case of *Galt v. the United States* (1913), and by the Court of Appeals in the

⁵⁴ Pure Food and Drugs Act as Amended, *United States Code, Annotated*. Title 21.

⁵⁵ McNary-Mapes Amendment to the Pure Food and Drugs Act, 1933, Section 10a.

⁵⁶ *United States Code, Annotated*, Title 21. Pure Food and Drugs Act as amended. West Publishing Company, St. Paul, 1927.

State of Washington in the case of *A. O. Anderson and Company v. the United States* (1922), and the District Court of Texas in the case of the *United States v. Two Hundred Cases, etc.* (1923).⁵⁷

Between January 1925 and December 1932, 111 salmon packers and distributors were tried for violations of the Pure Food and Drugs Act. The number of offenses have not diminished since then. The nature of the charges filed against offenders, the plea, and the judgment of the court are indicated in the "Notices of Judgment under the Food and Drugs Act."⁵⁸ The "Notices" themselves provide a clear picture of the efforts to enforce the provisions of the law, the freedom from appeals to higher courts, and the nature of the penalties fixed by the trial court.

A statement contained in the report submitted to Henry A. Wallace, Secretary of Agriculture, by W. G. Campbell, Chief of the Food and Drug Administration,⁵⁹ provides an illuminating bit of information on recent conditions in the salmon industry.

The salmon pack of 1932 approximated 5,867,590 cases and included some of the worst fish encountered in recent years. The large run experienced was undoubtedly the primary cause; canneries apparently could not handle the volume of fish received. With a defective inspection program in the canneries for the removal of bad fish, the result was the packing of a large quantity of objectionable material. Of 116 canneries given attention by our Seattle Station, the product of 29 was found to be in violation. Thirty-four per cent of the official samples examined were found actionable. In addition to 695 official samples, more than 400 informal samples were also examined. One hundred and seven consignments were seized and 77 recommendations for prosecution transmitted to the Department of Justice. Surveillance of the canned salmon pack will continue to be a major project of the Food and Drug Administration. A satisfactory pack is put out by a majority of the canners, but the practices of the minority will apparently continue to require regulatory attention. After so many years of regulatory operations directed at the salmon-canning industry, it should not be necessary to institute annually such a large number of seizure and prosecution actions.

MISBRANDING

The canned-salmon industry has suffered from many instances in which merchandise has been misbranded by secondary, and in some cases, primary sales agencies, possessing their own proprietary labels. In recent years, surprisingly few willful violations have been proved against the salmon packers.

⁵⁷ 39 Appellate District Court 470. *Federal Reporter*, Volume 284, p. 542. Volume 280, p. 157.

⁵⁸ United States Department of Agriculture, *Bureau of Chemistry, Service and Regulator Announcements*, Cases 13, 201-15,000.

United States Department of Agriculture, Food and Drugs Administration, Cases 15,001-17,000 and 20,743-20,852.

⁵⁹ *Report of the Chief of the Food and Drugs Administration*, 1933, p. 6. Government Printing Office.

The offenses involve a false statement as to the species or grade of salmon contained in the can, or the name of the selling agent or manufacturer. A generous interpretation would be that the first type of offense is possible through error, but the latter must be attributed to some other cause.

The courts have interpreted the words "fresh," "select," etc. in light of the accepted meaning in the canned-salmon industry, and have otherwise followed trade usage quite closely in dealing with the problems of misbranding.^{60, 61}

The government has encountered considerable difficulty in prosecuting alleged violators of the misbranding provisions of the Food and Drugs Act. The indefinite character of the original law permitted some firms to meet the literal requirements respecting labeling, but, in the absence of specific prohibition, to take advantage of the consumers. Efforts to remedy this inherent defect took the form of an amendment known as the McNary-Mapes Amendment, or Public Law Number 538. The avowed purpose of the amendment was to establish definite standards for canned-food products.⁶²

The act authorizes the Secretary of Agriculture to "determine, establish, and promulgate" standards of quality "in the interest of the consumer" and to prescribe the form of statement which must appear on each package that falls below such standard. Nothing has been done in applying this law to the salmon industry up to the present time.

SALMON INDUSTRY COMPARATIVELY FREE FROM SHORT-WEIGHT CONTAINERS, ETC.

Speaking generally, the industry is comparatively free from offenses of imitation, coloring for deception, and shortweighting. This problem is within the power of the packers to control without serious difficulty, and inasmuch as there would be little opportunity for financial gain, few cases of this character have been found.

TRENDS IN VIOLATION OF LAW

During the period from 1925 to 1932, only 7 out of 120 judgments, or 5.77 per cent, involved charges of misbranding, while 113 cases, or 94.23 per cent, involved adulteration.⁶³

⁶⁰ *United States Code, Annotated*, Title 21. Notes on decisions on misbranding. Section 9.

⁶¹ *United States v. Two Hundred Cases, more or less, of Canned Salmon*. (District Court of Texas, 1923.) *Federal Reporter*, Volume 289, p. 257.

⁶² *United States Code*, pp. 627-630. Amendment to Section 8, Pure Food and Drugs Act, 1930.

⁶³ Notices of Judgment, *op. cit.*

The court decisions might, for convenience, be grouped as follows :

Goods released under bond for reprocessing.....	59
Goods confiscated and destroyed.....	28
Fines imposed	26
Miscellaneous judgments	7
Total cases tried.....	120

It is worth noting that 58 cases were not contested and consent decrees were issued by the courts; 23 defendants refused to claim the merchandise, and as a result such merchandise was ordered confiscated and destroyed, and in 39 cases the plea was "guilty."

The reason for the consent decrees or nonappearance of the defendants might be attributed to two major causes: (1) desire of the accused to avoid publicity, and (2) the futility of fighting the charges where evidence of guilt was obvious.

STATE LEGISLATION

California, Oregon, and Washington each have Pure Food and Drug Laws adhering closely to the statutes of the United States. The California law is worded almost exactly after the Federal statute.⁶⁴ The state inspection system has been a negligible force in improving conditions in fish canneries. Inspection service has been curtailed as a result of inadequate law enforcement. Officials of the Federal Food and Drugs Administration carry on inspection of canned salmon entering San Francisco from Washington and Alaska.

Oregon has attempted to deal with the problem through the Commercial Fisheries Code of Oregon.⁶⁵ The Code limits the time between removal from water and canning to sixty hours. The duty of enforcement is placed on the fish commission or its authorized representative.⁶⁶

In the State of Washington, enforcement of the pure-food legislation is vested in the Department of Public Health. The law is similar to that in California and Oregon.⁶⁷ Machinery for enforcement is practically negligible.

BURDEN OF ENFORCING PURE-FOOD LAWS SHIFTED TO FEDERAL GOVERNMENT

No definite attempt has been made by any one of the three Pacific Coast states to provide the means for enforcing the pure-food laws. Two reasons can be given for this attitude: (1) lack of funds; (2) a belief that the enforcement activities of the Federal Government in dealing with interstate shipments (imports from Alaska) are sufficient, and that the violations in interstate

⁶⁴ Pure Food and Drugs Act of 1907, as amended to 1933. Sections 4 and 5 *California General Laws*, 1907 and 1933.

⁶⁵ *Oregon Code*, Volume 40, p. 101.

⁶⁶ *Ibid.*, Volume 40, p. 212.

⁶⁷ *Remington's Washington Laws*, 1907, Chapter 211, amended in 1923.

trade do not warrant the expenditure of excessive amounts by the respective states.

The Food and Drug Administration maintains a staff of chemists in San Francisco and Seattle for the purpose of analyzing thousands of samples from each shipment of salmon entering the ports. Such examinations are instrumental in keeping much of the adulterated product out of the regular trade channels.

ATTEMPTS TO STRENGTHEN FEDERAL AUTHORITY

The weaknesses of the Food and Drugs Act have long been recognized, but it was not until June, 1933, that any systematic plan for supplanting the law with a more satisfactory piece of legislation was attempted. In 1933 Senator Royal S. Copeland of New York⁶⁸ introduced a proposed revision of the Act, but it failed to obtain sufficient support to be voted on in that session of Congress. Efforts to revise the Pure Food and Drugs Act were not successful until June 1938, at which time Congress passed a new Federal Food, Drugs, and Cosmetic Act (Public Law No. 717—75th Congress, 3rd Session). The new law strengthened materially the authority of the Federal Government involving cases of adulteration and misbranding of food products.

Features in the new law that might prove more effective in controlling the quality of canned salmon placed on the market than was heretofore possible are:

1. False advertising of foods, drugs, and cosmetics is prohibited.
2. Definite informative labeling is required.
3. Definite standards for food are established.
4. Factories must operate under Federal permits where it is impossible otherwise to protect the health of the public in a satisfactory manner. The licensing feature enables the administrators to exercise their power to control the sanitary condition of the factories, and at the same time make illegal the shipment of merchandise in interstate trade without such license.
5. Better control of false labeling and advertising is provided.
6. More severe penalties are provided. The use of injunctions against chronic offenders is possible under the proposed measure.⁶⁹

The so-called Tugwell Bill, which preceded the Copeland Bill, and the present Federal Food, Drugs, and Cosmetics Act was far more rigid and the authority granted to government officials was far greater. Among other things, the bill made mandatory the designation of grades on the labels.⁷¹

⁶⁸ *Senate Document 1944*, 73 Congress.

⁶⁹ Report of the Chief of the Food and Drugs Administration, pp. 13-15, *op. cit.*

⁷¹ Press releases in recent months seem to indicate that the chain stores are not averse to having a standardized system of grading canned goods made obligatory.

OPTIONAL FEDERAL INSPECTION SERVICE PROVIDED⁷²

During the closing days of the seventy-third session of Congress, a measure was passed providing for an optional government inspection service for all packers of sea foods. The act authorized the Secretary of Agriculture, upon application from any member of the industry, to designate supervisory inspectors to inspect all premises, equipment, methods, materials, containers, and labels used by such applicants; and to fix fees in such amounts as to cover the cost.⁷³ The law further authorized the firms making application and complying with the standards set forth by the inspectors to print on the labels placed on such products the statement that they had conformed to the standards prescribed.⁷⁴

There is a feeling among the salmon packers that competition would force a general acceptance of the Federal inspection service if any one member of the industry should accept it.⁷⁵ The claim is advanced that the cost to the canned-salmon industry would be prohibitory.⁷⁶ A further argument advanced against the acceptance of the provisions is that it would not be feasible for the government to maintain inspectors in the many widely scattered salmon canneries in Alaska for the short period of time necessary to inspect and supervise salmon-canning operations.

OFFICIAL RECOGNITION OF PROBLEM

Progressive leaders in the industry have recognized that the problems of misbranding and adulteration must be solved before the canned-salmon market can be expanded to any considerable degree. To such end, William Calvert, President of the San Juan Fishing and Packing Company, stated in his annual report to the Association of Pacific Fisheries in 1930⁷⁷ that the Association had furnished each cannery superintendent with thirteen bulletins on *Quality in Canned Salmon*, showing how quality may be obtained, and that the Association had supported two important pieces of Federal legislation.

COOPERATIVE EFFORT TOWARD IMPROVEMENT
OF QUALITY

That the salmon-canning industry is fully cognizant of the harmful effects caused by the numerous cases of adulteration and misbranding carried

⁷² Public Law Number 451, Amendment 10a to the Pure Food and Drugs Act of 1907.
op. cit.

⁷³ *Ibid.*

⁷⁴ *Ibid.*

⁷⁵ *Pacific Fisherman*, October, 1934. Volume 32, No. 11, p. 15.

⁷⁶ The fee has been fixed by the Secretary of Agriculture at 10 cents per case.

⁷⁷ *Pacific Fisherman*, Volume 29, No. 2, p. 100.

before the courts, is well illustrated by the organized pressure being brought to bear on salmon packers through the medium of educational literature, associations, and "cutting" demonstrations to eliminate the abuses long prevalent in the industry. The work in this direction is discussed below.

NATIONAL CANNERS' ASSOCIATION

In 1919, the National Canners' Association extended its inspection service to the canned-salmon industry, at the request of a majority of the packers, installing a branch laboratory at Seattle and employing a staff of chemists. This service is optional with the packers, but it is significant that the laboratories furnished an impartial examination of samples from more than six million cases of the 1934 salmon pack.⁷⁸

ASSOCIATION OF PACIFIC FISHERIES AND THE PACIFIC CANNED-SALMON BROKERS' ASSOCIATION

The keynote of every meeting of the organizations connected with the salmon business in the past few years has been "better quality." The two principal organizations—the Association of Pacific Fisheries and the Pacific Canned Salmon Brokers' Association—have adopted an educational program directed to the packers and cannery superintendents, and have instituted a "cutting" demonstration of canned salmon. Samples of all grades were obtained from retail stores for the event.

The packers were strongly impressed by the poor showing of some of the samples, which they claim were purchased at bargain stores and consisted largely of rejected or cull merchandise that could not be sold through the regular trade channels. The examiners at the "cutting" found several instances of canned salmon that was misbranded or otherwise ineligible for interstate trade.

Packers claim that bargain sales agents made a practice of buying odd lots of culls or damaged merchandise and peddling them out in every conceivable manner at exceptionally low prices. Obviously, the ultimate responsibility rests with the packers for permitting such merchandise to be distributed.

Due to the lack of Federal supervision over intrastate shipments, local markets become the dumping ground for the bargain salmon which competes directly with standard-quality goods. To avoid such competition, arrangements were made with reconditioners of canned salmon to turn such merchandise over to the Pacific Canned Salmon Brokers' Association to be disposed of in an orderly manner, or if it is unacceptable to the examiners of the National Canners' Association, to be disposed of for animal feed. The mar-

⁷⁸ *Pacific Fisherman*, Volume 32, No. 11, p. 25.

keting of inferior merchandise is permitted under the Pure Food and Drugs Act if the containers are properly labeled as substandard.⁷⁹

THE CODE FOR THE CANNED-SALMON INDUSTRY

While there is an accepted policy of marketing canned salmon according to species, the quality of the products contained in the cans packed by the same firm or by different firms varies considerably. The industry attempted to eliminate misbranding by incorporating in the Code Rule 8, Article VII, which stated that

No member of the industry shall mark, brand, label, advertise, offer or bill canned salmon in any manner which is intented to or does deceive purchasers, or substitute inferior salmon for the species ordered.

The Code further provided that reprocessed salmon must be plainly labeled as such. Specific labeling of the various grades is restricted to the use of certain accepted names. Members of the industry were forbidden to sell "unlabeled canned salmon without obtaining from the buyer a guarantee that the salmon will not be labeled in violation of this Rule."

Although no longer in effect, it is possible that the Code regulations provided the medium through which the canned-salmon industry will be able to cooperate in raising the standard of the products placed on the market; before this can be done, however, definite standards must be established in the industry for canned salmon. Once such standards are prescribed, it might be possible through proper supervision of production to increase materially the prestige of the products in the eyes of the consumers.

VI. FACTORS AFFECTING SUPPLY

PROBLEMS OF SUPPLY PECULIAR TO THE SALMON INDUSTRY

Nature exercises almost complete control over the supply of salmon available for the market at any given time. Except in the fisheries industries, a man can, with a maximum of assurance, locate his supply of raw material, calculate the extent of his holdings, and, barring accidental destruction and perishability, can depend on the supply remaining intact until it is consumed. In the salmon industry, the runs vary considerably from year to year, and scientists have been unable to estimate the time and extent of such variations. Shifts of salmon runs from one stream to another have occurred.

⁷⁹ McNary-Mapes Amendment of the Pure Food and Drugs Act. *op. cit.*

The great rapidity with which the supply of salmon in many of the rivers on the Pacific Coast has been exhausted is well illustrated by the shift in production of canned salmon from the Sacramento River to Alaska (see Table 4). Overfishing worried fishermen on the Columbia River as early as 1884, and since then many of the coastal streams have been abandoned due to an unprecedented decrease in the annual runs.⁸⁰ Ill-advised fishing methods that resulted in a practical closure of the rivers to fish entering each season for spawning soon crippled the industry in many areas.

EXPANSION OF FISHING AREA HELPS MAINTAIN PRODUCTION LEVEL

Unless the canned-salmon production statistics are analyzed carefully, one might conclude that the salmon fisheries are more productive than ever. The maintenance of the high output of canned salmon, however, is due to two factors; namely, (1) expansion of the salmon industry into more distant regions, and (2) the rapid rise in importance of lower grades of salmon for canning purposes.

FLUCTUATION IN THE SALMON CATCH

Similarly, the fluctuations in the salmon catch from year to year must be accounted for in more than one way. A statistical and historical study of the Alaska Fisheries by W. H. Rich and E. M. Ball⁸¹ attempted to explain biologically and economically the cyclical and secular trends that have taken place in production over a period of years. From the data assembled by the two scientists, there was much to support the theory that the recurrent fluctuations in the size of the salmon runs could be expected at intervals of about five years. The following chart shows that the gradual upward trend in canned-salmon production from 1878 to 1917 was in keeping with the development of the western hemisphere. No noticeable declines in production were attributed to biological causes until the sharp abatement of the productive process from 1917 to 1921. Since then there has been a definite manifestation of the gradual depletion of the cyclical salmon runs. Should a similar chart be drawn for California, Oregon, and Washington, these fluctuations due to biological causes would appear in some sections about forty years earlier.

EARLY INTEREST OF GOVERNMENT IN CONSERVATION

The Federal Government expressed an interest in conservation of the salmon fisheries as early as 1885, and instituted studies on the Sacramento River and as far north as the Columbia River, for the purpose of obtaining in-

⁸⁰ Streams abandoned or practically abandoned: Sacramento, Rogue, Klamath, Nehalem, Tillamook, Nestucca, Siletz, Yaquina, Umpqua, Smith, and Noyo Rivers.

⁸¹ *The Alaska Fishery Statistics*, Bureau of Fisheries Document 1102.

formation upon which to base an intelligent policy for protection of the fisheries, and at the same time furnish the industry with a guide for its productive activities.

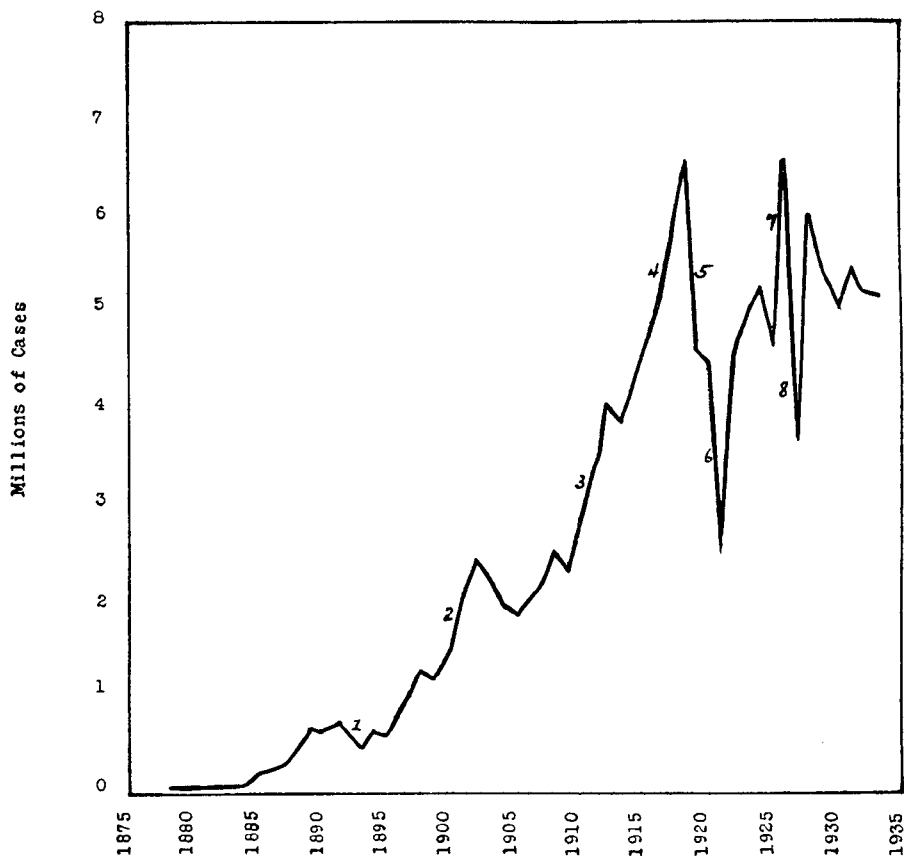


Chart I. Chart showing fluctuations in the Alaska salmon catch with notes on factors contributing to the variations.*

- | | |
|---|---|
| *1. Economic depression of 1892 | 5. Drop in Reds in Western Alaska |
| 2. Development of Bristol Bay—Reds | 6. Drop in Chums and Pinks in Southeastern Alaska |
| 3. Development of Southeastern Alaska | 7. Rise in all species—biological |
| 4. Continued development in Southeastern Alaska | 8. Drop in all species—biological |

Source: Alaska Fishery Statistics, 1930. W. H. Rich and E. M. Ball.

STUDIES OF IMPORTANCE TO THE INDUSTRY

Historically, the work of David Starr Jordan⁸² was perhaps the most notable contribution to the study of aquatic biology in the nineteenth century. Dr. Jordan was later associated with Professor Charles H. Gilbert of Stanford University, who conducted a series of experiments, the results of which were published for the United States Bureau of Fisheries in 1913.⁸³ Later works⁸⁴ tend to substantiate the earlier conclusions published by Jordan and Gilbert (see pages 36 and 37) in the last quarter of the nineteenth century and the first fifteen years of the twentieth.

EFFORTS TO DETERMINE MATURITY AGE

Efforts of scientists engaged in the study of the natural history of the salmon have centered largely on the determination of the maturity age or spawning age of the five species of Pacific Coast salmon, and on the migratory habits of these species. Both problems have been subjected to careful investigational work for a number of years, and thus far findings have been made of utmost importance to the industry. Brief reference should be made to the method of conducting the experiments.

Marking salmon fry in one manner or another to determine maturity age has long been the use in various sections of the world,⁸⁵ but Jordan and Gilbert conducted the first systematic experiments. One of the most success-

⁸² *The Fishery Industry of the United States*, U. S. Commissioner of Fish and Fisheries. Edited by G. B. Goode. Government Printing Office.

⁸³ Gilbert, Charles H. *Age of Maturity of Pacific Coast Salmon of the Genus *Oncorhynchus**. Bulletin of the U. S. Bureau of Fisheries. Vol. 32.

⁸⁴ Snyder, J. O. *Three California Marked Salmon Recovered*. California Fish and Game, Vol. 7, No. 1, January 1921, Sacramento.

The Return of the Marked King Salmon Grilse. *Ibid*, Vol. 8, No. 2, April 1922.

A Second Report on the Return of King Salmon Marked in 1919 in the Klamath River. *Ibid*. Vol. 9, No. 1, January 1923.

A Third Report on the Return of King Salmon Marked in 1919 in the Klamath River. *Ibid*. Vol. 10, No. 3, July 1924.

Rich, Willis H., and Harlan B. Holmes. *Experiments in Marking Young Chinook Salmon on the Columbia River, 1916-1917*. Bulletin United States Bureau of Fisheries, Volume 34, 1928.

Foerster, F. E. *An Investigation of the Life History and Propagation of the Sockeye Salmon at Cultus Lake, B. C.*, No. 3. *The Down-Stream Migration of the Young in 1926 and 1927*. Contribution of Canadian Biol. and Fish., n.s., Volume 5, and No. 3.

Pritchard, A. L. *Return of Marked Pink Salmon in 1932*. Progress Reports, Pacific Biol. Sta. Nanaimo, B. C., and Fisheries Experiment Sta., Prince Rupert, B. C. No. 15, 1932.

⁸⁵ Izaak Walton mentioned the attempts of his fellow Scotsmen in marking the salmon in the rivers of Scotland in 1653. The method used was merely to "tie a ribbon" on the tail of the salmon in such manner that it would be recognized at a later date. No other details of the marking process are given.

The use of tags of one kind or another has not been uncommon in recent years. Punching a V or U-shaped hole in the tail of fish has also been employed.

ful methods employed in recent years has been the removal of both the dorsal and adipose fins before liberating the fry from the hatchery pools, thus eliminating the possibility of error which might occur when one of the fins might be missing for other reasons. In all of the studies made, the marked fry have been planted in one or more streams where observations could be made in subsequent years as to migratory habits and the spawning ages.

JUDGING THE MATURITY AGE BY SCALES

In recent investigations, considerable emphasis has been placed on the reliability of the "scale method" of judging the maturity age of the salmon. Under microscopic examinations, the scale shows a group of concentric rings for each year's growth quite similar to those found on any cut tree. As the salmon grows, the number and arrangement of the rings on the scale change. Davidson has used this method quite recently in his work for the Bureau of Fisheries.⁸⁶ Cobb⁸⁷ indicated in his work that the scale method has been used in Scotland for a number of years; scientists, however, are unwilling to accept the scale test as absolute proof of the maturity age of the Pacific salmon.

EARLY STUDIES OF JORDAN AND GILBERT

Great importance is attached to the early studies of Jordan and Gilbert from an economic as well as a scientific standpoint. The whole policy of preservation and propagation is based on such studies. As a result of their investigations of salmon, and after observing marked salmon that had been caught from year to year after planting, they seem to place little faith in a later-accepted theory that salmon tend to return to the stream in which they are born to spawn.

CONCLUSIONS REACHED BY GILBERT FOLLOWING 1912 INVESTIGATION

Gilbert continued the work started by himself and Dr. Jordan at an earlier date. In one of his most notable investigations, successful attempts were made over a number of years at planting marked fry and observing the salmon captured in the stocked streams. The results of Dr. Gilbert's work were published in the Bureau of Fisheries report of 1912. He presented the following conclusions.⁸⁸

1. The Sockeye spawns normally either in its fourth or fifth year, the king salmon in its fourth, fifth, sixth, or seventh year, the females of both species being preponderantly 4-year fish.

⁸⁶ Davidson, Frederick A. *The Homing Instinct and Age at Maturity of Pink Salmon* (*Oncorhynchus gorbuscha*). Bulletin 15, United States Bureau of Fisheries, 1934.

⁸⁷ Bureau of Fisheries Document 1092, *op. cit.*

⁸⁸ Gilbert, Charles H. *Op. cit.*, pp. 4-6.

2. The young of both sockeye and king salmon may migrate seaward shortly after hatching, or may reside in fresh water until their second spring. Those of the first type grow more rapidly than the second, but are subject to greater dangers and develop proportionately fewer adults.

3. Coho salmon spawn normally only in their third year. The young migrate either as fry or yearlings, but adults are developed almost exclusively from those which migrate as yearlings.

4. Dog (Chum) salmon mature normally either in their third, fourth, or fifth years, the humpback always in their second year. The young of both species pass to sea as soon as they are free swimming.

5. The term "grilse," as used for Pacific salmon, signifies conspicuously undersized fish which sparingly accompany the spawning run. They are precociously developed in advance of the normal spawning period of the species. So far as known, the grilse of the king salmon, coho, and dog (chum) salmon are exclusively males; of the sockeye, almost exclusively males, except in the Columbia River, where both sexes are about equally represented. The larger grilse meet or overlap in size the smaller of those individuals which mature one year later at the normal period.

6. Grilse of the sockeye are in their third year, of the king salmon in their second or third year, of the coho and the dog (chum) salmon in their second year.

7. The great differences in size among individuals of a species observed in the spawning run are closely correlated with age, the younger fish averaging constantly smaller than those one year older; the curves of the two may overlap.

LATER STUDIES TEND TO VERIFY GILBERT'S CONCLUSIONS

Dr. Davidson reached two valuable conclusions from the investigational work carried on in the state of Washington, and in Alaska from 1930 to 1932; namely,⁸⁹

1. In view of the returns from these marking experiments it is conceivable that the extent to which the pink salmon return to their parent streams to spawn may be dependent upon the proximity of other pink-salmon streams in the vicinity. . . .

2. The marked pink salmon that have thus far returned from these marking experiments have all returned at 2 years of age. Their age at maturity, as determined by the number of bands of growth rings on their scales, was in every case consistent with the age at which they actually matured and returned to spawn. . . . All of the evidence thus far collected indicates that the pink salmon mature at 2 years of age and until contradictory evidence is found, it may be assumed with relative certainty that they consistently mature at the close of their second year of life.

A publication of the Canadian Department of Fisheries, "The Salmon Fishery of British Columbia,"⁹⁰ tends to confirm the opinions expressed in the works of Gilbert and Davidson as well as the other scientists cited above.

⁸⁹ Davidson, Frederick A. *Op. cit.*, p. 38.

⁹⁰ Issued by the Department of Fisheries, Ottawa, 1931, p. 4.

PROTECTIVE MEASURES

If supply is to be maintained, it is essential that a sufficient number of salmon escape the nets each year to carry on the natural function of reproduction. When millions of fish are kept from their spawning pools because of fishing activities, it is necessary to adopt such protective legislation as is found in California, Oregon, Washington, Alaska, and British Columbia.

STATE CONTROL

The laws of the various states restrict fishing activities within certain specified dates each year and govern the use of fishing apparatus. Licensing provisions are provided and the funds are largely diverted to the fishery department within the state for use in maintaining fish hatcheries for artificial propagation of commercial and sporting fish.

FEDERAL CONTROL

Fishing operations within the jurisdiction of the Territory of Alaska are completely under the control of the Bureau of Fisheries of the United States Government, and regulations pertaining to the methods of catching, licensing, length of season, and propagation are issued directly by the Secretary of Commerce upon the request of the Commissioner of Fisheries.⁹¹

When, in the opinion of the United States Commissioner of Fisheries, the annual salmon run in a given district is in danger of serious depletion, it is the duty of the Commissioner to take the action necessary to protect the industry of that district. Usually, the ruling, which emanates from the office of the Secretary of Commerce, places a restriction of one kind or another on fishing operations in order to permit the necessary escapements for the purpose of spawning.

CLOSING BRISTOL BAY⁹²

A definite tendency toward depletion of the five-year cyclical run of Red salmon in the Bristol Bay district led the United States Bureau of Fisheries to conduct a study of the conditions existing in that section of Alaska. The fishery experts from the Bureau found that the canned-salmon pack in the district had, at the end of several five-year cycles, reached an alarmingly low figure of 361,743 cases in 1930 as compared to 742,829 cases in 1920; 1,192,348 cases in 1915; and 825,447 cases in 1910. As practically all of the salmon in this area are canned, the figures given above give a satisfactory gauge as to the size of the catch.

⁹¹ Alaska Fisheries Act of 1924.

⁹² The Bristol Bay fishing area has been the most productive section of Alaska in the production of Red salmon.

Further observations of the investigators disclosed that the preponderant percentage of fish taken from Bristol Bay consisted of five-year old fish, and in view of the very low run of 1930, it would be necessary to resort to a restriction of fishing operations in order to maintain a normal supply for each succeeding five-year cycle. On the basis of such information, the Bristol Bay district was closed to salmon fishing during the season of 1935.⁹³

METHOD OF CONDUCTING FISHING OPERATIONS

Fishing for salmon is carried on with many different kinds of fishing apparatus, the type used depending on the nature of the river, bay, or estuary. Cobb⁹⁴ describes eleven different methods used in commercial-fishing operations in the salmon industry. The use of gill nets, haul seines, traps, purse seines, fishwheels, and trolling is common throughout most of the industry.⁹⁵

In the operation of the salmon fishery, drift gill nets are more generally used than any other fishing device; the larger part of the annual salmon catch, however, is made by means of purse seines. Trolls and traps are the other methods in common usage.

LEGAL RESTRICTIONS AND THEIR EFFECT ON SUPPLY

Practically all of the methods used by fishermen are subject to some form of regulation. The law requires that the mesh must be equal to a minimum width in both gill nets and purse seines. In some states, traps are forbidden; in others, stationary traps can be used, but floating traps are outlawed. Such restrictions as those now applicable in all states and Alaska serve to reduce the available supply for market purposes as well as to forestall wasteful use of the resource.

COOPERATION OF THE INDUSTRY IN CONSERVATION WORK

Cooperation of the salmon industry with the Government in the work of conservation of the salmon fisheries has been practically negligible. Restrictive legislation limiting fishing time and fishing areas has always met with strong opposition from fishermen and small packers. Larger companies have tended to support restrictions whenever the supply of canned salmon became difficult to move at prices satisfactory to such packers.⁹⁶

⁹³ *Pacific Fisherman*, Volume 32, No. 9, p. 12.

San Francisco News, Volume 33, No. 32, p. 1.

⁹⁴ *Bureau of Fisheries Document 1092*, pp. 477-493.

⁹⁵ Except in instances where a specific device is prohibited by law.

⁹⁶ Packers and fishermen have consistently opposed regulatory measures pertaining to the type of fishing apparatus that could be used on the Columbia River and in the Puget Sound district. Also, the decision of the Bureau of Fisheries to close Bristol Bay in 1935 met with strong protests from fishermen's organizations. The Alaska Packers Association supported the closing order.

Taken as a whole, the salmon industry should be severely condemned for its lack of interest in the problem of conservation of the fisheries. Too often it has been the policy of the members of the industry to oppose protective legislation on the one hand, and at the same time to bring organized pressure to bear to get additional government hatcheries established to maintain the supply, which, in effect, amounts to nothing more than a form of subsidy for companies engaged in the salmon trade.

VII. PRODUCTION—CANNING

GEOGRAPHICAL DISTRIBUTION OF SALMON

Salmon fishing is carried on from Monterey on the California Coast northward to the Aleutian Islands, and as far south on the Asiatic coast as the Japanese Islands. For commercial-canning purposes, the Klamath River in northern California is the only stream south of the Oregon boundary from which fish are taken. Relatively small quantities of fish are canned along the Oregon and Washington coast; consequently, for the purpose of this study, we shall concern ourselves principally with the Columbia River district, Puget Sound, the British Columbia districts, and Alaska. The canning activities in

Table 4. PACIFIC CANNED-SALMON PACK FOR 1937
(Full cases of 48 1-pound tins)

District	Sockeye or red	Pink	Chum	Coho	Chinook	Steel- head	Grand total
Alaska:							
Southeast	165,170	2,138,264	503,235	86,912	30,613	.....	2,924,194
Central	459,399	1,480,658	190,425	48,028	31,234	.....	2,209,744
Western	1,476,585	376	35,454	138	7,547	.....	1,520,100
Puget Sound	56,983	327,973	18,759	31,747	6,412	.....	441,874
Columbia River ....	.....	7,526*	30,592	69,801	291,343	17,568	416,830
Washington, Ore- gon, and Cali- fornia coasts .....	.....	2,865*	7,932	82	2,576	.....	13,455
Total, United States	2,158,137	3,957,662	786,397	236,708	369,725	17,568	7,526,197
British Columbia ..	323,127	577,550	450,934	114,869	35,258	784	1,502,522
Siberia	337,271	735,053	.....	8	1,300	.....	1,073,632
Japan	667,693	571,811	850	93,222	1,596	.....	1,335,172
Total, Foreign	1,328,091	1,884,414	451,784	208,099	38,154	784	3,911,326
Grand total	3,486,228	5,842,076	1,238,181	444,807	407,879	18,352	11,437,523

Source: *Pacific Fisherman*, Volume 36, No. 2, pp. 59-81.

* Blueback.

Asiatic waters are conducted on the northern Japanese Islands and on the Kamchatka Peninsula in Siberia. The relative importance of salmon canning is shown by districts in Table 4.

NORTHWARD MOVEMENT OF THE CANNED-SALMON INDUSTRY

Few industries, if any, have experienced the rapid shift in the center of activity that has taken place in the salmon industry. The rapid depletion of the salmon supply in the Sacramento River due to overfishing caused an early shift to the profitable and well-stocked Columbia River fishing grounds. By

Table 5. NORTH AMERICAN CANNED-SALMON PACK BY SPECIES, 1900 TO 1937*

Year	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Total
1900	338,493	2,046,908	208,026	231,022	155,208	20,579	3,001,254
1901	455,395	3,801,730	126,535	585,017	86,230	20,000	5,074,907
1902	379,641	2,702,045	227,031	549,602	313,603	8,593	4,180,515
1903	403,836	2,231,555	330,319	564,507	61,232	7,251	3,598,700
1904	444,472	1,950,949	168,235	299,333	168,235	9,868	3,041,092
1905	443,794	3,488,322	269,806	253,559	138,642	9,822	4,603,945
1906	424,974	2,122,204	397,346	416,602	450,151	6,500	3,817,777
1907	354,209	1,707,813	397,786	1,114,100	272,135	6,604	3,852,647
1908	397,171	2,186,325	386,745	726,656	303,838	11,862	3,994,597
1909	262,554	3,671,555	373,567	882,410	218,987	17,382	5,426,455
1910	372,901	2,274,780	521,966	589,043	555,908	5,576	4,320,174
1911	627,714	1,869,927	676,141	2,373,595	592,790	8,618	6,104,887
1912	426,338	2,544,435	621,817	1,556,128	808,630	7,198	5,956,953
1913	285,472	4,643,425	300,033	2,392,166	432,812	9,539	8,063,447
1914	509,100	3,121,964	579,980	1,222,013	1,200,433	11,292	6,644,782
1915	641,979	2,492,865	551,821	2,825,570	1,107,707	29,650	7,639,592
1916	646,341	2,432,048	715,815	2,036,077	1,500,332	24,999	7,355,612
1917	673,980	3,248,843	588,749	3,929,332	1,648,313	35,677	10,124,894
1918	697,140	2,987,710	838,088	2,953,245	2,175,031	41,086	9,692,300
1919	704,195	1,707,846	793,175	2,426,414	2,367,481	24,392	8,023,503
1920	705,050	1,892,691	361,566	2,138,959	1,175,001	16,054	6,289,321
1921	419,508	2,034,310	362,943	1,038,090	359,947	11,362	4,226,160
1922	353,588	2,480,811	510,919	2,241,760	908,283	26,640	6,522,001
1923	389,802	2,309,142	534,225	3,371,917	1,120,591	27,757	7,753,434
1924	406,096	1,902,832	542,682	3,295,739	1,835,251	31,270	7,990,543
1925	550,071	1,581,792	667,817	3,111,320	1,803,371	17,248	7,731,610
1926	485,788	2,550,771	607,778	4,101,422	1,762,134	36,233	9,544,126
1927	538,574	1,738,054	643,522	2,241,304	1,217,338	33,377	6,411,169
1928	354,798	2,214,498	602,203	3,583,433	2,165,652	17,492	8,928,076
1929	375,497	2,100,787	564,826	3,775,764	1,541,213	24,821	8,382,908
1930	427,282	1,710,018	758,451	4,266,301	1,085,351	18,509	8,265,912
1931	418,483	2,084,385	388,140	3,890,755	671,574	13,679	7,467,016
1932	394,698	2,482,800	445,456	2,341,817	1,310,038	14,386	6,989,195
1933	343,268	2,579,660	401,486	3,261,596	1,019,832	19,486	7,625,328
1934	352,552	3,354,933	596,951	4,261,262	1,362,905	16,183	9,944,786
1935	279,693	1,232,852	596,117	4,139,114	1,304,216	15,484	7,567,476
1936	314,195	2,968,184	533,285	5,181,954	1,846,675	20,350	10,864,643
1937	385,040	2,491,655	370,795	4,524,821	1,237,331	18,352	9,028,719

Source: *Pacific Fisherman*, Vol. 36, No. 2, p. 72 (1938).

* Cases of 48 one-pound cans.

1884, there were four canneries operating in Southeastern Alaska, two in Central Alaska, and one in Western Alaska.

A similar shift in production occurred simultaneously with the movement of cannery locations. Since 1888, the upward trend in the salmon pack in Alaska has been in direct contrast to the downward trend on the Columbia River and the Oregon and Washington coastal streams.

Statistics clearly indicate that the canned-salmon industry has been forced to move farther away from civilization in order to operate successfully and to maintain an adequate supply of raw material.

PRODUCTION ACCORDING TO SPECIES

There has been a definite tendency to pack Pink, Coho, and Chum salmon in increasing quantities since the beginning of the century. The canning of the so-called inferior grades did not reach a dominant place, however, until 1907, when the pack practically equalled that of Chinooks, Reds, and Sockeyes. Since 1911, the pack of Pink salmon for North America has been in excess of the Reds and Sockeyes. The Chum (Dog) salmon pack noticeably increased from 1914 to 1926, but has gradually declined since then. (See Table 5).

INCREASED PRODUCTION OF LOWER GRADES

The change in the center of activity of the salmon industry was caused by the shortage in supply of fish in relation to cannery requirements. The northward movement provided the necessary Reds and Sockeyes to supply the canneries for a number of years, but the gradual decline in the runs of the more desirable species resulted in the use of Pinks, Cohos, and Chums, which had been ignored in the past. The plentiful supply of the three species mentioned above, coupled with a comparatively small demand for salmon with a lighter-colored flesh, expressed itself in a corresponding price differential between the different grades.

Attention of the Federal and state authorities interested in the preservation of the salmon industry has been directed largely toward the artificial propagation of the Chinooks, Sockeyes, and Reds to the exclusion of some other species. Should such a policy continue to prevail, there is a possibility of a future shortage in the lower grades of salmon.

LOCATION OF INDUSTRY WITH RESPECT TO MARKETS

Approximately 300 salmon canneries are located along the Pacific Coast from the southern boundary of Oregon as far north as the Bering Sea, a distance of more than 2,500 miles. The canneries vary in production capacity from 100 cases to 15,000 cases of salmon per day. Inasmuch as Alaska is

the center of approximately 75 per cent of the North American output (82 per cent for the United States in 1932), the remoteness of the producing center from the marketing centers on the Atlantic seaboard and in England naturally places the industry at a disadvantage in marketing its products.

The expense of storage, transportation, and insurance has added significance in the salmon industry, accounting for the development of primary market and storage facilities in Seattle, and explaining other developments in the channels of distributing the canned salmon.

Since most of the canneries are situated well off the regular routes of travel, many of the larger companies have found it economical to maintain their own fleet of cannery tenders (ships) rather than depend on other available methods of transportation to carry the season's pack from the packing plant to the primary markets of Seattle or San Francisco.

RELATION OF NUMBER OF CANNERIES TO TOTAL PACK

The approximate relationship that existed between the total number of canneries operated and the annual pack of salmon in Alaska from 1888 to 1937 showed a definite correlation. The high point was reached in 1929, when 159 canneries were opened during the season in Alaska, with a combined output of 5,370,242 cases. In 1932, only 87 canneries opened, in 1933



Chart II. Showing total pack of canned salmon and total number of canneries operated on Pacific Coast from 1890 to 1934.

only 92; and in 1937 only 116; but the salmon pack for the 1932 and 1933 seasons amounted to 5,260,488 cases, 5,226,698 cases, and 6,654,038 cases, respectively. These figures, compared to the 1929 pack, illustrate the extent to which the expansion program in the industry had been overdone.⁸⁷

During the same period, a similar condition existed in the whole industry. Including Alaska, 290 canneries operated on the Pacific Coast in 1929, and by 1932, the number was reduced to 164, or 43.4 per cent.⁸⁸ At the same time, the total production of canned salmon decreased from 8,382,908 cases to 6,989,195 cases, or only 17 per cent. The 1937 salmon pack of 181 Pacific Coast canneries was 9,028,719 cases, an increase of slightly over 7.5 per cent over the 1929 pack, although the number of canneries operated in 1937 was 37.6 per cent lower than the 1929 figure.

While the industry anticipated a much greater reduction in output figures, a very favorable salmon run occurring during the 1937 season, combined with more modern equipment, offset the proposed limitation sought by the industry by reducing the number of canneries operated.

RELATIVE SIZE OF COMPANIES IN VARIOUS DISTRICTS

The extension of canning activities into more remote areas was made possible by the development of large, well-financed concerns. In western Alaska, operations have been practically restricted to the Alaska Packers Association, the Alaska Salmon Company, Bristol Bay Packing Company, Columbia River Packers Association, Libby, McNiell & Libby, Nakat Packing Corporation, Pacific American Fisheries, and the Red Salmon Canning Company. In the past few years, there has been considerable cooperation between these firms. The Alaska Packers Association has operated the two canneries owned by the Columbia River Packers Association, and in other cases the pack of one cannery has been prorated among two or more firms interested in such canning operations.

Many independent holdings have weakened the control of large concerns in central and southeastern Alaska; but the above-named firms are well represented. Large operating companies and holding companies seemingly have control of the larger part of production in British Columbia.

Smaller companies and correspondingly smaller packs characterize the industry in Puget Sound, the Columbia River, and the coastal district of Oregon and Washington.

⁸⁷ Blower, Ward T. *Alaska Fishery and Fur Seal Industry in 1932*, p. 36. Appendix to the Report of the United States Commissioner of Fisheries for 1933.

⁸⁸ Johnson, Hugh S. *Preface to the Code of Fair Competition for the Canned-Salmon Industry*, May 15, 1934.

Table 6. TOTAL PACK OF CANNED SALMON IN ALASKA, AND NUMBER OF CANNERIES OPERATED, 1888 TO 1937.

Total	Canneries	Total cases
1888	16	412,115
1889	37	719,196
1890	35	682,519
1891	30	801,400
1892	15	474,717
1893	22	643,654
1894	21	686,440
1895	23	626,530
1896	29	966,707
1897	29	909,078
1898	30	965,097
1899	32	1,078,146
1900	42	1,548,139
1901	55	2,016,804
1902	64	2,536,824
1903	60	2,246,210
1904	55	1,953,756
1905	47	1,894,516
1906	47	2,246,989
1907	48	2,202,100
1908	50	2,618,048
1909	45	2,403,669
1910	52	2,438,777
1911	64	2,820,963
1912	87	4,060,129
1913	79	3,756,433
1914	82	4,167,832
1915	86	4,489,002
1916	100	4,919,589
1917	113	5,922,320
1918	134	6,677,369
1919	133	4,591,110
1920	143	4,395,599
1921	84	2,604,973
1922	121	4,501,355
1923	136	5,063,340
1924	134	5,304,923
1925	129	4,450,889
1926	132	6,652,882
1927	138	3,566,072
1928	151	6,070,110
1929	159	5,370,242
1930	152	4,988,987
1931	115	5,432,535
1932	87	5,260,488
1933	92	5,226,698
1934	114	7,470,586
1935	99	5,155,826
1936	116	8,454,948
1937	116	6,654,038

Source: *Pacific Fisherman*, Volume 36, No. 2 (1938) p. 75.

Table 7. TOTAL PACK OF CANNED SALMON ON PACIFIC COAST AND NUMBER OF CANNERIES OPERATED, 1890 TO 1937

Year	Canneries	Total cases
1890	91	1,609,696
1891	106	1,578,746
1892	88	1,355,130
1893	109	1,877,415
1894	104	1,877,650
1895	121	2,169,848
1896	135	2,413,312
1897	138	3,133,134
1898	153	2,492,252
1899	156	3,257,825
1900	165	3,091,542
1901	143	5,186,407
1902	180	4,194,558
1903	169	3,606,900
1904	156	3,276,882
1905	170	4,600,010
1906	158	3,817,776
1907	136	3,846,677
1908	138	3,994,597
1909	185	5,413,592
1910	159	4,320,174
1911	183	6,155,302
1912	156	5,961,785
1913	125	8,033,915
1914	209	6,648,329
1915	237	7,649,594
1916	253	7,703,894
1917	306	10,223,022
1918	299	9,607,766
1919	298	8,014,924
1920	248	6,309,597
1921	192	4,152,137
1922	230	6,522,114
1923	236	7,725,686
1924	232	8,002,266
1925	237	7,775,333
1926	237	9,572,081
1927	244	6,443,810
1928	239	8,944,780
1929	290	8,382,908
1930	257	8,265,912
1931	197	7,471,709
1932	164	6,989,195
1933	185	7,625,328
1934	196	9,944,780
1935	150	7,567,476
1936	184	10,864,643
1937	181	9,028,719

Source: *Bureau of Fisheries Document 1092*, p. 554.
Pacific Fisherman, Volume 36 (1938), p. 75.

PRODUCTION CAPACITY OF CANNERIES

The scale of production in the canned-salmon industry as compared to other fish-canning establishments is quite large. Salmon canneries usually operate from 20 to 30 days annually, and during that time it is necessary to have sufficient facilities available to care for large quantities of fish.

The capacity of a salmon cannery is customarily indicated by the number of complete lines* of equipment located in a given establishment. The Alaska Pacific Salmon Company owns and operates 11 canneries, with 35 lines of canning machinery capable of packing 35,000 cases daily.⁹⁹ The Pacific American Fisheries, Incorporated, operated an average of 13 canneries each year from 1929 through 1933, with an average annual pack of 715,848 cases, or 55,065 cases for each cannery operated. The average daily output for these canneries was approximately 1,835 cases.¹⁰⁰ The Alaska Packers Association operated an average of 12 canneries a year from 1924 through 1933; each cannery had an average daily output of about 1,700 cases.¹⁰¹ Naturally, such averages as those given above must be considered cautiously. The maximum and minimum would be much higher or lower. A cannery of the Fishermen's Packing Corporation was recently publicized as having a production capacity of 15,000 cases of salmon each day.¹⁰²

The utilization of the available capacity in salmon canneries from year to year is indicated somewhat by the annual pack of individual plants over a period of five years, 1929-1933. (See Table 10.)

The salmon-canning industry presents the problem of excess capacity in a slightly different form than is found in other businesses.¹⁰³ First, the product has certain unique characteristics; second, there is no adequate method of forecasting the catch; third, the period of operation is restricted by law and nature to a relatively short period; and fourth, the inability of packers to judge the productivity of a given fishing ground frequently results in over-expansion.

The Alaskan canneries are unable to operate in some sections except for a short period in the summer (*supra*). Salmon canneries are seldom located in places where it would be possible to use the equipment in canning other

* A line of salmon-canning machinery includes all equipment necessary to turn out a can of salmon. It includes, among other things, the "Iron Chink," filling machine, weighing machine, seamer, etc.

⁹⁹ *Poor's 1934 Industrials*, p. 349.

¹⁰⁰ *Moody's 1933 Industrials*, p. 203.

¹⁰¹ *Ibid.*, p. 2107.

¹⁰² *Pacific Fisherman*, Volume 32, No. 11, p. 24, 1934.

¹⁰³ The fresh-fruit and vegetable-canning establishments are faced with many of the same problems.

Table 8. COMPARATIVE CANNED-SALMON PACK FOR 18 CANNERIES, 1929-1933, 1935, AND 1937.

Cannery and Location	1929	1930	1931	1932	1933	1935	1937
Pacific American Fisheries: •	Cases	Cases	Cases	Cases	Cases	Cases	Cases
Nushagak (Western Alaska).....	53,795	24,430	24,518	40,585	65,509	.....	.....
Alitak (Central Alaska).....	74,418	16,520	69,202	23,645	61,753	80,780	.....
Metlakatla (Southeastern Alaska).....	40,218	46,442	31,405	34,878	.....	.....	.....
Pillar Bay (Southeastern Alaska).....	.....	.....	30,682	32,141	28,561	.....	.....
South Beltingham	123,043	51,475	54,408	.....	90,235	28,043	.....
Alaska Packers Association:	.....	.....	.....	.....	.....	.....	.....
Naknek (Western Alaska).....	.....	44,417	163,116	195,327	253,447	19,128	187,923
Karluk (Central Alaska).....	.....	11,468	117,752	122,237	157,081	125,501	213,484
Loring (Southeastern Alaska).....	.....	56,027	.....	.....	.....	.....	.....
Semiahmoo (Puget Sound).....	.....	.....	56,027	.....	.....	.....	.....
Alaska Pacific Salmon Corporation:	.....	.....	.....	.....	.....	.....	.....
Drier Bay (Central Alaska).....	52,415	30,629	.....	.....	.....	39,521	20,748
Unga* (Central Alaska).....	.....	.....	65,972	.....	.....	.....	.....
Sand Point† (Central Alaska).....	.....	.....	.....	119,415	121,790	123,709	124,876
Port Althorp (Southeastern Alaska).....	127,398	160,260	206,627	199,111	148,299	108,450	160,439
Rose Inlet (Southeastern Alaska).....	60,841	35,084	47,876	.....	41,344	70,585	65,812
Columbia River Packers Association:	.....	.....	.....	.....	.....	.....	.....
Astoria, Oregon	95,892	99,332	69,017	69,017	84,898	.....	.....
Ellsworth, Washington	12,815	6,910	5,769	4,675	11,808	.....	.....
Fishermen's Packing Corporation:	.....	.....	.....	.....	.....	.....	.....
Everett, Washington	277,748	138,248	223,672	116,149	143,298	.....	.....
Western Fisheries Company:	.....	.....	.....	.....	.....	.....	.....
Anacortes, Washington	44,517	35,407	28,058	.....	14,540	.....	.....

Source: *Pacific Fisherman*, 1930, 1931, 1932, 1933, 1934, 1936, and 1938.

• Floating cannery, operated by International Packing Company.

† Floating cannery, replaced by new cannery in 1933.

foods; therefore, the maximum use is restricted to full operation during the salmon-canning season. Probably no cannery has capacity for the largest possible catch, yet few use their full capacity for more than two or three days each season.¹⁰⁴ One also encounters the problem of plant abandonment—either temporarily or permanently.¹⁰⁵

The salmon-canning industry has not concerned itself with the problem of excess capacity except to recognize its existence. In a recent publication of the Brookings Institute¹⁰⁶ the following comment, made on the status of the problem of excess capacity as applied to the fruit and vegetable-canning industry, aptly applies to salmon canning:

The extreme seasonality of the canning industry exposes estimates of practical capacity to the danger of serious error as a result of the necessity for deciding somewhat arbitrarily what number of working days shall be taken as the length of the working year. Furthermore, the perishable character of the product and the importance of weather considerations result in considerable uncertainty as to the length of day which should be used in estimates. Actual operations may drop to a few hours or be extended by night work to practically a double-shift basis. Even the National Cannery Association has not ventured to put forth an estimate as to capacity for recent years, much less for the period prior to its organization.¹⁰⁷

TYPES OF BUSINESS ORGANIZATIONS OPERATING SALMON CANNERIES

The corporation is the dominant form of organization in the salmon industry. Of 309 canneries listed in the Salmon Packers' Register for 1934, 285 were corporations, 4 partnerships, and 20 single proprietorships.¹⁰⁸ At the inception of the industry, and well up towards the beginning of the present century, partnerships tended to dominate as the form of ownership.¹⁰⁹ Several new factors arose, however, as the industry pushed northward, necessitating a change in the organizational forms.

Reasons for the change to the corporative form include the necessity for larger capital investments to carry on the business far from the consuming

¹⁰⁴ The *Census of Manufactures, 1925*, estimated that the operating capacity for canneries engaged in canning fish, crabs, shrimp, oysters, and clams was 48.5 per cent in 1921 and 44.3 per cent in 1923.

¹⁰⁵ Salmon canneries closed temporarily because of depressed market conditions or a shortage of fish, frequently remain closed. Abandonment of buildings is common. Most of the canning machinery is leased, and therefore removed by its owners. Permanent abandonment takes place as a result of a shortage of salmon or of fishing areas being closed by the states or Federal Government.

¹⁰⁶ *America's Capacity to Produce*, p. 182. Brookings Institute, 1934.

¹⁰⁷ *Ibid.*, p. 182.

¹⁰⁸ *Salmon Packers' Register, 1934-35*. Pacific Fisherman Publishing Company, 1934.

¹⁰⁹ Cobb, John N. *Pacific Salmon Fisheries*, Bureau of Fisheries Document 1092.

markets; the popularity of the corporation due to the protection it gives to the investors (stockholders) in a speculative business; and finally, large packing concerns began to expand into the salmon-canning business.¹¹⁰

The concerns operating as single proprietorships or partnerships are in every instance confined to very small establishments.

TENDENCY TOWARD LARGE OPERATING COMPANIES

Although the Alaska Packers Association was incorporated in California in 1893 as an operating company, practically all of the large companies now operating in the salmon business have been organized since 1924. The Columbia River Packers' Association (1924) was a reorganization of a company by the same name incorporated in 1899. In 1933, the Alaska Pacific Salmon Company secured control of 11 canneries through a reorganization scheme.¹¹¹ The Pacific American Fisheries, Incorporated, (1928) was reorganized in 1934 and had a sufficient number of canneries to make it the largest packer of canned salmon in the world.¹¹² This same company later leased the canneries operated by the Booth Fisheries Corporation with an option to purchase.¹¹³ In 1928, the British Columbia Packers', Limited,¹¹⁴ was incorporated and secured control of and the right to operate 39 canneries in British Columbia.

Outside interests like the Atlantic-Pacific Tea Company, the Booth Fisheries Corporation, Libby, McNiell & Libby, and the New England Fish Company have established themselves in the salmon-canning business through subsidiary concerns or cannery sales departments.

The Federal Trade Commission Report on the Canned-Salmon Industry in 1918¹¹⁵ discussed the holdings of meat-packing concerns (Swift & Company, Wilson & Company, and Cudahy) in salmon-canning businesses, in an attempt to establish its claim that large meat-packing concerns were controlling several of the salmon-packing companies indirectly, although no direct ownership could be established. A transaction of outstanding importance in this connection took place in October, 1934, when a large packing company secured a controlling interest in the Pacific American Fisheries, Incorporated.¹¹⁶

It would seem that the holding company has been practically eliminated from the salmon industry. By 1934, the British Columbia Packers', Limited,

¹¹⁰ *The Federal Trade Commission Report* cited the fact that loans were more easily secured from banks in case of larger firms.

¹¹¹ *Poor's 1934 Industrials*, p. 349.

¹¹² *Salmon Packers' Register, 1934-35*, p. 87.

¹¹³ *Ibid.*, p. 43.

¹¹⁴ *Moody's Industrials, 1933*, p. 2066.

¹¹⁵ Report on Canned Foods (Canned Salmon).

¹¹⁶ *Pacific Fisherman*, Volume 32, No. 12, p. 11.

appeared to be the only holding company in existence. Even this firm engages in the direct operation of some of the canneries under its control.¹¹⁷

CONCENTRATION NOTICEABLE SINCE 1928

The Pacific Fisherman discloses the trend toward consolidation from 1927 to 1934 based on estimates and questionnaires sent out by the publishers. The results follow:¹¹⁸

YEAR	NUMBER OF COMPANIES	NUMBER OF CANNERIES OPERATED	PER CENT OF TOTAL PACK* <i>Per cent</i>
1927	81	134	88
1928	88	143	90
1929	92	152	90
1930	78	161	90
1931	79	162	88
1932	69	148	88
1933	60	103	95
1934	62	107	95

* Estimates by the *Pacific Fisherman*. Companies upon which the estimate is based are those from which suitable data could be obtained.

CONTROL THROUGH LEASE

The rapid concentration of the control of the salmon-canning industry by large interests assumes further significance when it becomes known that the leasing of canneries is quite common in the industry, and that active control of numerous operating units is secured through lease rather than ownership. This practice reached sizable proportions recently with the leasing of nine of the Alaska plants of the Booth Salmon Fisheries by the Pacific American Fisheries, Incorporated.¹¹⁹ This lease runs for a period of three years with an option to purchase. The California Packing Corporation obtained control of the two Alaska canneries of the Columbia River Packers Association for 1934, and many of the canneries operated by the British Columbia Packers, Limited, are being operated under a twenty-year lease consummated in 1928.¹²⁰

Through the medium of leases, mergers, and consolidations, there is at present a concentration of holdings in the industry in the hands of seven concerns. These companies operate 100 canneries and control more than half the annual output of canned salmon. The capacity of these companies to produce is far in excess of that indicated by the 1933 pack, which is used in the following table. The statistical data given are for the American companies only.¹²¹

¹¹⁷ *Moody's Industrials*, 1933, p. 2066—Information as to the type of organization acquiring control of the Pacific American Fisheries is lacking at present. All data concerning the transaction are purely preliminary.

¹¹⁸ *Pacific Fisherman*, Volume 32, No. 2, p. 92.

¹¹⁹ *Salmon Packers' Register*, 1934-35, p. 89.

¹²⁰ *Moody's Industrials*, 1933, p. 2066.

¹²¹ *Pacific Fisherman*, 1934, Volume 32, No. 2.
Salmon Packers' Register, 1934.

FIRM NAME	NUMBER OF CANNERIES	CASES PACKED	PER CENT OF TOTAL
Alaska Pacific Salmon Co.....	11	421,402	6.62
Alaska Packers Association	9	863,297	13.57
Columbia River Packers Association....	7	153,873	2.42
Libby, McNiell & Libby.....	15	521,561	8.20
Nakat Packing Corporation (A. & P. Co.).....	6	320,171	5.03
Pacific American Fisheries	25	681,443	10.72
Total		2,961,747	46.56

The report of the Federal Trade Commission in 1917 disclosed that five prominent concerns controlled, either directly or indirectly, 53.4 per cent of the 1917 salmon pack. The production of canned salmon at that time was distributed on the following basis:¹²²

FIRM NAME	CASES PACKED	PER CENT OF TOTAL
Alaska Packers Association.....	1,583,587	18.4
Deming-Gould (Pacific American Fisheries)....	981,483	11.4
Booth Fisheries	1,112,586	13.0
Libby, McNiell & Libby.....	563,240	6.5
Wilson-Wakefield	353,704	4.1
Total	4,594,870	53.4

INVESTMENT IN CANNERIES

While the accuracy of data of this character is often subject to question, it is believed that the figures compiled in 1930 by the State of Washington Division of Fisheries on the valuation of canneries operated in that state provide a fairly representative estimate of the capital investment in the salmon canneries in the districts covered as of that date.

The Washington Division of Fisheries reported that the heavier outlay for cannery buildings and machinery is found in the Puget Sound and Columbia River districts. In these two areas the average for 19 canneries approximated \$52,000 per cannery; in the Grays Harbor District the investment in 8 plants averages \$10,750; and in the Willapa Harbor district the investment reaches a low figure of \$5,000.¹²³

The capital investment in physical properties of the canneries considered in the report is \$13,672,702.79, excluding operating expenses added to the investment in the report.

¹²² *Report of Canned Foods (Canned Salmon)*, p. 74.

¹²³ *Fortieth and Forty-first Annual Reports of the State Department of Fisheries and Game*, Division of Fisheries, for the period from April 1, 1929 to March 31, 1931. Olympia, Washington.

The companies operating canneries in Alaska have a much larger amount tied up in property than those operating in Oregon and Washington, and as a general rule there is a corresponding difference in the size of the operating companies. Some of the larger companies publish data as to the investment in canneries and equipment:

FIRM NAME	NUMBER OF CANNERIES	INVESTMENT
Alaska Pacific Salmon Company ¹²⁴	11	\$3,696,581
Alaska Packers Association ¹²⁵	9	6,216,104
British Columbia Packers, Limited ¹²⁶	39	6,958,226
Columbia River Packers Association ¹²⁷	6	3,607,676
Pacific American Fisheries, Inc. ¹²⁸	18	4,194,157

The distribution of this outlay for operating equipment varies, of course, from company to company, but there is a minimum amount of equipment in which all packers must have funds invested.

METHODS OF FINANCING

Financing of salmon canneries is done through private funds, the sale of stocks and bonds, commercial loans from banks, and loans from selling agents. The importance of each of these methods will be discussed on the following pages.

PRIVATE FINANCING

Private financing of salmon canneries is of minor importance at present. Only 20 canneries are operated as single proprietorships and 4 as partnerships. The combined production capacity of this group is exceptionally small, and the investments are relatively low.

STOCK SALES

Stock issues form the most important part of the securities issued and sold by the cannery organizations to finance the purchase of equipment and fixed property. While this type of security furnishes the bulk of the funds needed for investment, the current operating charges must be met from liquid funds held by the company, or through funds borrowed from banks or other sources on short-time notes properly secured by a mortgage on the annual salmon pack.

¹²⁴ *Poor's 1934 Industrials*, p. 249.

¹²⁵ *Moody's 1933 Industrials*, p. 2107.

¹²⁶ *Ibid.*, p. 2066.

¹²⁷ *Ibid.*, p. 2614.

¹²⁸ *Poor's 1934 Industrials*, p. 948.

No-par stock seems to have met with favor in the financing of the salmon-canning industry in recent years. Preferred stock is used sparingly, and bonds, except with two or three older companies, are entirely missing from the balance sheets of the respective companies.

BANK LOANS AND SELLING AGENTS LOANS

Though a larger percentage of funds for current operating expenses is obtained through commercial banking houses than through any other channel, the selling agents are frequently called on by packers to furnish loans to carry on seasonal operations until the pack is ready for sale. This arrangement between the packer and the selling agent is common where there is an exclusive sales contract between the two parties. On other occasions, the financing is carried on by the agents when the banks are rather reluctant to make the loan.

It is a general practice for selling agents to make sizable advances at the end of the season to packers until payment is received for the canned goods sold. The Alaska Pacific Salmon Company reported in its first statement a note of \$217,000 held by the Skinner, Eddy Corporation (selling agents), and one for \$191,649 by the American Can Company.¹²⁹

Financing cannery organizations is sometimes done entirely by selling agents engaged in the selling of canned salmon and other fishery products. In other instances, there are no financial relations between the canners and agents except those made necessary through sales activities.

DISTRIBUTION OF PRODUCTION COSTS

The costs of production vary considerably between companies, depending mostly on the location of the cannery in respect to an abundant supply of fish, the species canned, and the differences in the manner of handling depreciation.

Canneries located in an area where the waters have not been over-fished have an exceptional advantage over those on the older fishing streams such as the Columbia River. There is no reason why it should cost more to pack Pink than Chum, or Red than Pink, except that a price is paid for the various species of salmon in proportion to the relative abundance or scarcity of fish in the waters near the cannery.

The accounting procedure of the canned-salmon industry is no more standardized than that of other American businesses; consequently, it is not surprising to find differences in the allowances made for depreciation, as well as the methods of charging such depreciation against the business.

¹²⁹ *Poor's 1934 Industrials*, p. 349.

In Table 9, an attempt has been made to classify the expenditures of three companies operating a total of 35 canneries in Alaska, on Puget Sound, and on the Columbia River during 1933.¹³⁰

Table 9. OPERATING COSTS FOR 1933.

	Alaska Pacific Salmon Co.	Columbia River Packers Association	American Pacific Fisheries
	<i>Per cent of total cost</i>	<i>Per cent of total cost</i>	<i>Per cent of total cost</i>
Cost of sales (Includes cans, fish, cannery labor, etc.).....	73.9	72.3*	49.9
Selling and general administra- tive expense	13.4	11.2	18.6
Depreciation	†	10.8	7.1
Trapsites written off due to Federal Bureau of Fisheries closing certain areas	11.6	.....	.....
Miscellaneous expense	8.5	10.0	9.0
Profit .....	.....	.....	15.4
Loss	7.4	4.3	.....
Total	100.0	100.0	100.0

* Includes some fresh and frozen fish.

† Probably included in trapsites written off.

More specific data as to costs and the distribution of costs are provided in the record of a certain Canadian firm for the year 1930.¹³¹ This firm is considered by its owners as slightly less than the median size. The pack of salmon during the 1930 season consisted of 9,035 cases, distributed as follows:

<i>Species</i>	<i>Cases</i>
Sockeye	8,006
Coho	99
Pink	760
Chum	59
Spring	85
Steelhead	25
Total	9,035

It will be noted in Table 10 that expenditures for fish and cans constitute 57.7 per cent of the total cost of production. These figures correspond in a general way to the estimates made in the Survey of the Federal Trade Commission in 1918.¹³² Such items as fish transportation and cost of nets and lines

¹³⁰ Data compiled from the published income accounts of the three companies. Included in Poor's 1934 Industrials, and Moody's 1933 Industrials.

¹³¹ The firm operating the above cannery also operated seven others during the same season. By request, the name of the firm is not given.

¹³² *Report of the Federal Trade Commission on Canned Foods (Salmon)*, 1918.

amount to 12.6 per cent of the total, while cannery or shore labor totals 7.6 per cent.

The costs of production were distributed as shown in Table 10.

Table 10. DISTRIBUTION OF PRODUCTION COSTS

Nature of expenditure	Amount	Cost per case	Per cent of total
General expenses	\$ 1,714.83	\$ 0.13	1.5
Salaries	1,526.41	0.17	1.4
Insurance	1,035.13	1.11	.9
Rent of machinery	2,831.90	0.31	2.5
Depreciation on plant	2,022.04	0.22	1.8
Depreciation on general buildings.....	728.51	0.08	.7
Cans	15,522.83	1.72	13.8
Boxes	2,093.40	0.23	1.9
Lacquer	246.57	0.03	.2
Salt	603.34	0.07	.5
Fuel	979.56	0.11	.9
Supplies (miscellaneous)	181.83	0.02	.2
Roe Fish (spawning)*.....	49,450.142	5.47	43.9
Labor:			
White	2,450.04	0.27	2.2
Chinese	6,131.27	0.68	5.4
Expenses:			
Telephone, etc.	196.95	0.02	.2
Transportation	250.00	0.02	.2
License	1,797.60	0.20	1.6
Fish transportation	8,145.06	0.90	7.2
Nets and lines	6,053.91	0.67	5.4
Skiffs and scows	2,780.29	0.31	2.5
Transportation (employees)	1,224.37	0.13	1.1
Fishing expense (miscellaneous).....	4,504.93	0.50	4.0
Total	\$112,653.19	\$12.38	100.0

* Canneries paid 35 cents a fish for Sockeye during the 1930 season. This is to be contrasted to a price of 50 cents in 1933.

The expenditure for machinery in the above instance is for canning equipment rented from the American Can Company. A large number of canneries obtain their canning equipment on such basis from the American or Continental can companies, the former having a virtual monopoly on such business.

LABOR IN THE SALMON INDUSTRY

The salmon industry employs nearly 20,000 workers during the seasonal operating period each year, and it is estimated that in the industry as a whole approximately two-thirds of this number are Oriental cannery workers. During the years 1931 and 1932, respectively, the Alaskan branch of the industry employed 18,158 and 15,738 persons. These employees were engaged as fishermen, shoresmen (cannery workers), and transporters.

SEASONAL CHARACTER OF EMPLOYMENT

Approximately 75 per cent of the labor used in Alaska for fishing and canning work must be imported for the duration of the salmon fishing operations which extend, at the most, over a period of six weeks. It is true that a small number of workers are employed for a slightly longer period prior to and after the most of the season's activities have been completed, but this group comprises a very small percentage of the total. The seasonal character of employment also applies to the British Columbia, Puget Sound, Columbia River, and all other fishing areas. The labor supply is obtained locally, thereby eliminating most of the problems arising out of the necessity of hiring imported workers. Problems of employing, transporting, housing, and feeding are caused by the necessity of obtaining the greater part of the workers far from the producing area.

FISHERMEN

The fishing operations are carried on almost exclusively by white men in the United States, and by white men and natives in Alaska. At the present time, Monterey Bay is the only place in American territory where Chinese or Japanese engage in salmon fishing.

Two types of fishermen supply the canneries with salmon. The first group is known as employee fishermen who supply approximately 70 per cent of the fish used by the canneries. The second group is called independent fishermen; these supply the canneries with the remainder of the fish needed.

An employee fisherman was defined in the proposed contract submitted to the Administrator by the Code Authority as "any person over whom a member of the industry exercises control by reason of the fact that the member of the industry has loaned, leased, chartered (or by way of subterfuge given or sold) any gear and/or boats for the purpose of fishing for such member."

UNIONIZATION OF WORKERS

Employee fishermen are well organized throughout the salmon industry, and in each district, the fishermen's union negotiates collective bargaining agreements with the employers as to the wages, working conditions, etc. In the Alaska fisheries most all of the canneries arrange for the employment of their fishermen through the Alaska Fishermen's Union, which dominates the fishing activities in that area.

COLLECTIVE BARGAINING AGREEMENTS

Collective bargaining agreements are entered into between the packers and the Alaska Fishermen's Union each year. Such agreements provide for a base rate of compensation for each fish delivered, according to the species and

condition of the fish. The rates of payment are based on the assumption that the customary amount of fishing apparatus would be provided for the fishermen by the canneries. It will be noticed in the scale of payment given in Table 11 that the variation is based on two factors: (1) the species and condition of the salmon, and (2) the relative abundance of the fish in a given area.

Table 11. PRICES PAID FOR THE DIFFERENT SPECIES.

Area	Species	Price each*
		<i>Cents</i>
Western and Central Alaska	Kings	40
	Reds and Cohos	9½
	Chums	3
	Pinks	1½
Bristol Bay	Kings	40
	Reds and Cohos	9½
	Chums	3
	Pinks	1½
Alaska Peninsula	Reds	9
	Cohos	7½
	Chums	3½
	Pinks	2½
Kodiak	Reds	12½
	Cohos	7½
	Chums	3½
	Pinks	2½
Cook Inlet	Chinooks	40
	Reds and Cohos	8
	Pinks and Chums	2
Cordova	Kings	50
	Reds	12½
	Pinks and Chums	3½
Yakutat	Reds	12½
	Cohos	8
	Pinks	2½

* *Pacific Fisherman*, Volume 32, No. 8, p. 12, 1934.

CHARACTER OF CONTRACTS ON PUGET SOUND AND COLUMBIA RIVER

Most of the contracts between the fishermen's union and packers on Puget Sound and the Columbia River call for payment for salmon on the basis of species and quality. The scale of payment is based also on the salmon catch; that is, a price of 50 cents per fish might be paid for the first 500,000 fish delivered, 30 cents per fish for the next 200,000, and the remainder delivered during the season would be paid for on the basis of 20 cents per fish. On the Columbia River, Chinooks are paid for on a pound basis depending on the supply of fish entering the canneries.

INDEPENDENT FISHERMEN

Independent fishermen are those who utilize their own equipment to conduct fishing operations. This group is now well organized and is able to bargain satisfactorily with the packers in most instances. The basis for payment is the same as that for employee fishermen, except that the deductions made from the base rate for equipment supplied to the employees is given to the independent fishermen for supplying their own equipment.

This group must assume the responsibility of getting to the fishing grounds and also run the risk of finding an unfavorable market for their products during the season. The companies buying fish from the independents assume no responsibility for them except to pay a stipulated price for the fish delivered in accordance with the terms of the contracts, whenever such contracts have been issued.

CANNERY LABOR

The remoteness of the producing districts from centers of population produces many peculiarities in the salmon-canning industry, the most important being the labor problem created by the necessity of importing about 75 per cent of the labor from the states of California, Oregon, and Washington for the duration of the fishing season.

The necessity of assembling, housing, feeding (optional), and transporting the bulk of the laboring force from the United States to Alaska presents such a significant array of conditions centering around the salmon-canning business that it cannot be ignored. Additional importance is attached to this problem since the adoption of the Code for the industry and the National Labor Relations Act.

CONTRACT LABOR IN THE SALMON INDUSTRY

The contract labor system provides for the hiring of the labor supply through the medium of labor contractors. These contractors are paid a fixed sum for each case of salmon packed during the canning season. Workers are recruited from the foreign groups in San Francisco, Portland, and Seattle, and transported to and from the cannery, and supplied with food and lodging during the few weeks of the canning season.

With the supply of such large quantities of labor depending on the contractors engaged in supplying labor, and the earnings of the contractors being affected one way or another by the manner in which they feed, shelter, and pay their contract employees, serious abuses grew up under the system, which was filled with graft and corruption of every description. Workers were very frequently fleeced of their earnings by excessive charges for clothing and

luxuries which they were required to purchase in order to gain employment. Many of these articles were the kind for which they had no need whatsoever. The salmon-canning industry voluntarily gave up the contract-labor system in 1935. Since that time there has been no tendency to readopt such a plan of obtaining workers.

MINIMUM OF SKILLED WORKERS EMPLOYED

Except for a small number of supervisors and mechanical engineers, the labor employed in the salmon industry is unskilled. The greater part of the work of fishing, transporting, and canning is done by workers who have acquired a knowledge of their respective tasks over relatively short periods of time.

Machinery plays an important part in salmon canning. Mechanical filling machines were introduced as early as 1884 and now have, with few exceptions, replaced hand labor. The "Iron Chink," invented in 1903, has replaced from 15 to 20 men for each such machine in operation. Sanitary cans that were made in the salmon canneries by hand labor only a few years ago, are now shipped to the Alaska canneries in collapsed form from the factories in San Francisco, Oakland, Portland, and Seattle. It is a very simple task to run large numbers of these collapsed cans through the shaping machines at the canneries and round them out for immediate use. Heavy shipping costs incurred by shipping bulky containers to Alaska are materially reduced when collapsed cans are utilized. Many of the smaller canneries in Alaska still make their cans at the canneries or receive them ready-made from the factory.

ROUTINE TASKS PERFORMED BY WORKERS

Tasks left undone by machinery are largely routine. When the salmon are received at the cannery dock they are unloaded from the scows by hand or a chain conveyor, the loading of the conveyor being done by hand or gravity. After the salmon are dropped in the fish room, they are placed by hand on the "Iron Chink" which removes the head, tail, and fins, as well as opening and cleaning the fish. From the "Iron Chink," the salmon follow a chain conveyor through the sliming troughs where a group of slimers (usually Japanese) working in cold running water remove any viscera adhering to the inside of the fish. The salmon are removed from the sliming troughs by hand and placed upon a carrier running to the cutting and filling machine from which they are pulled (in filled cans) to the weighing machine, and then on through the crimper and vacuum closing machines. The closed cans are dropped into small trucks and wheeled to the cookers. After the cans are removed from the cookers and cooled and washed, they are labeled by hand or machine.

VIII. THE MARKET FOR THE PRODUCT

THE DOMESTIC MARKET

Data concerning the marketing aspect of this problem are inadequate. While reports of the salmon shipments from the Port of Seattle do not specify the species shipped or the exact destination of the shipments, from the standpoint of securing a sectional distribution of the product, there is considerable information of value.¹³⁴

The figures given below indicate the distribution of canned salmon from the primary market in Seattle to geographical areas within the United States, the ports principally affected being Boston, New York, New Orleans, and San Francisco:

YEAR	DESTINATION		
	ATLANTIC SEABOARD	CALIFORNIA	GULF PORTS
	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>
1929	1,155,058	74,660	299,762
1930	1,569,813	57,370	297,824
1931	1,469,268	161,133	376,694
1932	2,076,095	168,618	362,097
1933	1,617,966	153,038	365,635

The industry is not in a position to supply information as to the number of cases transshipped from the Atlantic Seaboard to interior points; it is the general policy of the shippers, however, to utilize ocean transportation to the New York harbor, and distribute the goods west from that point as far as the Great Lakes region.

MARKET FOR SPECIES OF CANNED SALMON

Members of the industry are in thorough agreement regarding the location of the domestic markets for the different species of salmon. The larger companies operating their own sales departments ship Chinook, Alaska Red, and Sockeye largely to New York and Boston. The general market demand in the Central and New England cities is largely for the better grades of canned fish. While considerable quantities of Pink salmon are sold in this area,¹³⁵ the principal market for Pink, Coho, and Chum salmon is in the South. The Pacific Coast states consume Alaska Red, Sockeye, and Pink.

The price range for canned salmon varies considerably between the higher and lower quality merchandise. When the customary retail price for a one-

¹³⁴ *The Port Warden's Annual Report*, City of Seattle Harbor Department.

The Port of Seattle Yearbook, 1934. The Port of Seattle.

¹³⁵ The Bureau of Fisheries has been making a study of the shipments from the city of Seattle by rail and water. The figures compiled have not been published, but should they appear, much information can be gathered from them.

pound can of Chinook is 30 cents, Alaska Red sells for about 25 cents, Pink for about 15 cents, and Chum for about 12 cents.

The salmon trade has found that the better grades are being consumed in the districts where the income level of the people is relatively high, and the lower grades are marketed in the sections of the country where the average income is comparatively low.

Table 12. PER-CAPITA INCOME IN THE UNITED STATES, 1929.

Districts	Income of entire population*	Population July 1	Per-capita income
	<i>Millions</i>	<i>Thousands</i>	<i>Dollars</i>
New England	\$ 7,377	8,130	\$ 907
Middle Atlantic	28,817	26,037	1,107
East North Atlantic	20,813	25,082	831
West North Atlantic	7,464	13,274	561
South Atlantic	7,314	15,700	466
East South Central	3,383	9,838	344
West South Central	5,738	12,065	476
Mountain	2,444	3,685	664
Pacific	8,017	8,023	999
Total United States	\$91,385	121,832	\$ 750

* Includes income from profits from the sale of property and imputed rent on owned homes.

Excludes imputed income from durable consumption goods other than homes.

Source: Leven, Moulton, and Warburton. *America's Capacity to Consume*, 1914. Tables 16-17. Brookings Institution.

Table 13. PER-CAPITA RETAIL DISTRIBUTION, 1929 AND 1933

District	Net retail sales (\$1,000)		Population July 1 (Thousands)		Per-capita retail sales distribution	
	1929	1933	1929	1933	1929	1933
New England	\$ 3,785,869	\$ 2,167,760	8,130	8,258	\$465.67	\$262.50
Middle Atlantic	12,717,899	6,633,819	26,037	26,741	488.45	248.08
East North Central	11,262,958	5,314,073	25,082	25,755	449.05	206.33
West North Central	5,269,554	2,641,958	13,274	13,387	396.98	197.35
South Atlantic	4,201,755	2,477,028	15,700	16,009	267.63	154.73
East South Central	2,171,995	1,025,923	9,838	10,006	220.78	102.53
West South Central	3,751,371	1,751,553	12,065	12,409	308.94	141.15
Mountain	1,548,650	739,614	3,683	3,748	420.40	197.34
Pacific	4,428,602	2,285,497	8,023	8,509	551.99	268.60
Total United States	\$49,114,653	\$25,037,225	121,832	124,822	\$403.13	\$200.58

Source: Sales—Department of Commerce, Bureau of Census, *United States Summary of the Retail Census for 1933*. Table IA, December 3, 1934.

Population—*Statistical Abstract of the United States*, 1933.

The two tables given on the preceding pages indicate the per-capita distribution of income and the per-capita retail sales distribution by sections in

the domestic market. On the basis of the statistics on income and retail-sales distribution, canned salmon would be marketed as follows:

<i>Species</i>	<i>Probable Market for Species</i>
Chinook	Middle Atlantic States
Sockeye or Alaska Red	Middle Atlantic States
	New England States
	East North Central States
	Pacific Coast States
Coho	Mountain States
	West North Central States
Pink	South Atlantic States
	West South Central States
Chum	East South Central States
	West South Central States

TREND OF CONSUMPTION

Over a period of twelve years there has been no noticeable tendency for an increase in the per-capita consumption of canned salmon, but the fact that there was no decrease during the depression is outstanding. Low prices have probably done much to enable the industry to maintain the consumption ratio since 1929. The following figures, based on the annual production and carry-over statistics of the *Pacific Fisherman*¹³⁶ and the United States Bureau of Foreign and Domestic Commerce¹³⁷ give the estimated consumption of canned salmon in this country during the period from 1922 to 1933, inclusive:

<i>Year</i>	<i>Per-capita consumption Pounds</i>
1922.....	1.75
1923.....	2.14
1924.....	2.15
1925.....	2.02
1926.....	2.53
1927.....	2.14
1928.....	2.18
1929.....	2.26
1930.....	2.14
1931.....	2.16*
1932.....	2.26*
1933.....	2.22*

*Estimated.

FOREIGN MARKET

Information relative to the general destination of canned salmon entering into foreign trade is more complete than that for the domestic market. Again, however, the statistics are confined to general canned-salmon exports rather than exports of specific species. To gather material relating to the species of

¹³⁶ *Annals*, 1930-1934, inclusive.

¹³⁷ *Apparent Per-Capita Consumption of Principal Foodstuffs in the United States*. U. S. Bureau of Foreign and Domestic Commerce, Trade Promotion Series, No. 38, p. 44.

salmon entering the foreign markets, it has been necessary to interview officials connected with firms engaged in the export business.

The marketing of canned salmon, like the marketing of all other commodities in foreign markets, presents several problems found only in that type of distribution. Trade restrictions in the form of tariffs, import quotas, and national laws governing the sale of canned goods, have, in late years, reacted unfavorably on the salmon exporters. These trade regulations, coupled with the depressed economic conditions in all countries, have further aggravated export-trade conditions in canned, fresh, and mild-cured salmon since 1929. Another deterrent to normal trade activity has arisen out of the unstable exchange conditions in most of the countries comprising the American export-salmon market.

UNITED KINGDOM

The United Kingdom, the most important consumer of Pacific Coast canned salmon, has at times taken as much as 95 per cent of these exports.¹³⁸

In recent years, the percentage of Japanese and Russian salmon entering English ports has increased perceptibly. American salmon packers recovered some of this lost trade during 1933 and 1934, partly as a result of the devaluation of the dollar. Over a period of ten years, the percentage distribution of the United Kingdom's canned-salmon imports, by country of origin, is given below:

<i>Year</i>	<i>United States</i>	<i>Canada</i>	<i>Japan and Russia</i>
1925.....	37.0	30.6	32.4
1926.....	32.7	18.5	48.8
1927.....	35.4	19.3	45.3
1928.....	26.0	11.5	62.5
1929.....	30.6	10.4	59.0
1930.....	20.9	10.8	68.3
1931.....	22.8	20.6	56.6
1932.....	25.2	16.6	58.2
1933.....	30.3	14.6	55.1
1934*.....	53.9	14.0	32.1

* January to September.

Based on the population of the United Kingdom and imports of canned salmon into the United Kingdom, the per-capita consumption ranged from 2.09 pounds in 1924 to 1.61 pounds in 1933.¹³⁹

There is no import duty on canned fish entering the United Kingdom.

¹³⁸ Exports to the United Kingdom in 1933 constituted 89.36 per cent of the total exports of canned salmon from the United States.

¹³⁹ *Fisheries of England and Wales*. "Sea Fisheries—Statistical Tables," 1926-1934. *Statistical Abstract for the United Kingdom*, Vol. 74, *Stateman's Yearbook*, 1934, p. 12.

The administration of sanitary and health laws, including those applicable to the sale of canned foods, and the power of issuing regulations are vested in the Minister of Health and the Board of Trade. The control of imports is left to the customs officials. English laws are free from arbitrary or petty rules having as an avowed purpose the restriction of import trade, but rather seek to protect the health of the consumer and prevent fraud or deception. They include such features as the limited use of preservatives and prohibition of harmful colors in canned foodstuffs. The United States Bureau of Foreign and Domestic Commerce recommends that the words "Artificially Colored" be printed on the labels. Size of containers, labeling, and drained weight of canned goods are not regulated, although an unwarranted amount of liquid in a container would be held as deception, and thus prohibited.

All shipments are admitted to the United Kingdom when documentary evidence is furnished by the consignee in the form of an ordinary commercial invoice and an ocean bill of lading received from the consignor.¹⁴⁰

OTHER FOREIGN COUNTRIES

The marketing of canned salmon in the continental European countries is seriously impeded by the quota tariff system and almost impossible import regulations.

In Germany, the situation was further aggravated by the moratorium on debts (1934). The arbitrary enforcement of the German pure food and drugs laws, as well as governmental decrees pertaining to the same subject, have furnished one of the principal obstacles in the way of foreign salmon exports to Germany during recent years.

French regulations have proved to be the most objectionable to the exporters of Pacific Coast canned salmon. The administration of the quota system in France necessarily nullifies the possibility of expanding the American canned-salmon market, and through the manner of its enforcement becomes exceedingly irritating to American exporters.

Next to the United Kingdom, Belgium and Holland rank in order as the principal importers of American canned salmon. The policy governing the sale of canned salmon in these countries is based largely on the assumption that the protection of the consumer against fraud or deception is paramount.

The export of canned salmon from the United States to South American countries was once a fairly thriving business, but competition from Japanese

¹⁴⁰ All of the rules and regulations mentioned above are contained in the *Handbook of Foreign Tariffs and Import Regulations on Agricultural Products*. U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, 1929. Revisions are given in mimeographed reports issued from the San Francisco office.

Table 14. EXPORTS OF CANNED SALMON FROM THE UNITED STATES TO SPECIFIED COUNTRIES FROM 1930 TO 1937.

Country	1930	1931	1932	1933	1934	1935	1936	1937
<i>Europe:</i>								
United Kingdom	19,925,269	18,497,937	28,938,353	20,946,480	41,660,266	39,827,496	38,593,690	30,454,088
Germany	73,721	30,842	94,972	12,000	35,044	8,502	75,174	30,072
France	62,120	.....	.....	.....	15,856	100	357,503	1,963,452
Netherlands	470,249	263,103	485,353	1,382,147	1,238,017	1,090,760	881,852	490,588
Belgium	147,014	101,440	210,663	207,564	297,404	138,998	219,488	306,548
Greece	74,400	86,794	.....	12	4,800	1,224	288	.....
<i>South America:</i>								
Chile	572,161	81,375	4,668	1,260	.....	936	44,064	28,905
Colombia	101,503	35,107	1,988	44,895	10,671	29,583	112,676	81,992
Venezuela	322,843	98,841	9,834	18,352	35,837	28,284	45,871	54,519
Argentina	10,781	1,674	6,611	8,500	7,180	3,340	1,090	2,775
<i>Asia:</i>								
China	61,106	22,821	37,859	27,440	41,896	39,129	25,572	23,426
Ceylon	47,186	24,118	2,136	5,856	12,598	13,257	10,142	4,453
<i>Oceania:</i>								
Australia	1,690,216	80,995	812,528	1,046,942	1,499,363	970,139	1,099,333	919,149
Philippines	840,158	1,882,796	803,808	1,081,601	1,575,601	1,195,317	2,008,509	1,594,394

Source: *Pacific Fisherman*, Volume 36, No. 2, p. 120.

salmon packers and the general economic conditions in the southern continent have practically eliminated American exporters from these countries.

IX. MARKETING THE CANNED PRODUCT

TRANSPORTING AND STORING

At the end of the Alaskan canning season, a fleet of company and privately owned vessels is loaded with the season's pack at the Alaska canneries and started for Seattle, Portland, or San Francisco. There the canned salmon is placed in public or private warehouses for storage. The salmon pack of the numerous canneries in the Puget Sound and Columbia River districts is usually kept in the warehouses of the respective canneries until it is sold. Shipments are then made directly from the cannery warehouse.

Seattle affords the salmon packers and buyers the principal market for trading in the products of the Pacific salmon fishery. As a result of this concentration of the trading activities in the Puget Sound metropolis, there has been an accompanying growth of facilities for handling the products, as well as the establishment of numerous selling agencies and brokerage houses dealing in canned salmon exclusively, or in connection with their selling activities with other canned goods.

SEATTLE, THE PRIMARY CANNED-SALMON MARKET

A perusal of the reports of the Port of Seattle, the Seattle Port Warden, and the statistical data made available by the United States Bureau of Fisheries, illustrates the magnitude of the salmon-packing industry, as well as the volume of canned salmon to be marketed annually through the medium of the established brokerage houses in that city. The "Port Warden's Annual Report" for the years 1929 to 1933, inclusive, reveals the following information relative to the importation of Alaskan salmon products into the Port of Seattle:

Table 15. PORT OF SEATTLE IMPORTS OF ALASKAN SALMON PRODUCTS.

Year	Canned		Fresh		Mild Cured	
	Cases	Value	Tons	Value	Tons	Value
1929	3,479,670	\$24,967,623	1,323	\$365,989	2,407	\$1,213,033
1930	3,816,102	22,878,428	1,898	455,273	2,696	1,289,368
1931	3,783,314	18,931,736	1,613	369,905	2,016	705,968
1932	3,636,658	14,077,576	2,168	311,328	2,529	553,539
1933	3,578,876	16,589,893	2,557	380,427	2,265	661,047

Ample facilities have been provided by public and privately owned terminals to take care of the huge shipments of fishery products entering the port annually. The Commission of the Port of Seattle maintains eight terminals, all of which provide storage space for canned products, and two maintain cold-storage and freezing plants of tremendous proportions.

Facilities for the storage of canned salmon are also made available in the ports of Vancouver, British Columbia; Astoria, Oregon; Tacoma, Washington; and San Francisco, California. The Port of Vancouver has developed excellent terminals that can be utilized for storing the Canadian pack, as well as for shipping Canadian canned-salmon products, about 700,000 cases of which were marketed in 79 different countries in 1933.¹⁴¹

GOODS STORED BY PACKERS

Packers bear the expense of transportation from the canneries and storage in the primary market, retaining title to all merchandise until transferred to the purchaser. Up to this point, therefore, the assumption of risk is a function performed by the producers.

With the canning of the salmon completed and the pack stored in the various warehouses in the four concentration points, the packers are immediately faced with the problem of placing their products on the market. Attempts have been made to solve the marketing problem in several ways, each having attained some degree of success.

Chief among the many factors contributing to the development of the present distributive machinery for marketing canned salmon are (1) the geographical location of the major part of the industry, (2) the short canning season in a given locality (legal restrictions), (3) the nature of the product, and finally (4) the limited operating capital of all the early and many of the present packers.

REMOTENESS OF NORTHERN CANNERIES

While the canneries in the Columbia River and Puget Sound districts are located near populated areas, the larger number in Alaska and the northern part of the Province of British Columbia are well off the path-road of civilization. The fact that the canneries are located in such isolated regions, and the fact that their pack is often too small to warrant setting up a marketing organization, have necessitated their dependence on established agencies capable of disposing of their products in the world markets.

¹⁴¹ *Third Annual Report of the Department of Fisheries*, Dominion of Canada, and correspondence with the Honorable Wm. A. Found, Deputy Minister of Fisheries, Ottawa, Canada.

SEASONAL CHARACTER OF THE INDUSTRY

The salmon-canning industry is purely a seasonal industry. The fisheries of Alaska are under strict control of the Federal Government, and the fishing activities are limited each year to a maximum of about 30 days,¹⁴² to allow an escapement of approximately 50 per cent of the run in order to conserve the fishery. On occasions, the Government has closed certain sections of the Alaska fishing area for an entire season when investigation disclosed the fact that the fishery was being depleted too rapidly. Limitation of operating time frequently leaves the canners without an adequate supply of fish; likewise, a heavy run finds them unprepared to care for the supply with proper dispatch.

THE NATURE OF THE PRODUCT

Canned salmon, by the nature of the product, is easily marketed in much the same manner as other canned foods. It is low in cost, packed in convenient-sized containers, and relatively nonperishable. The magnitude of the salmon industry and the packing companies, and the regularity of purchase by the consumers are such that variations from the customary channels of distribution for other canned goods are practically unnecessary.

LIMITATION OF OPERATING CAPITAL

Limited operating capital has been a source of worry for practically all salmon packers since the inception of the industry.¹⁴³ The Hume brothers were beset with financial worries during the first few years of their canning activities on the Sacramento River, and at present a large part of the packers are forced to rely on borrowed capital to carry them through the canning season and up to the time of marketing their products. Loans from selling agents have always been quite common, and such financial dependence has done much toward determining the method of distributing canned salmon.

METHODS OF DISTRIBUTION

The evolution of the present distributive methods for marketing canned salmon coincides closely with the development of the financial strength of cannerly organizations. It will be recalled (see page 14, Chapter II) that the early

¹⁴² Report of Hugh S. Johnson, Code Administrator, to the President, *op. cit.*

Alaska Fisheries Act of 1924. The time limit is set each year by the Bureau of Fisheries.

¹⁴³ Recognition is given elsewhere in this study to the adequacy of investment capital in several of the larger companies. Even with these concerns, short-time loans from banks and selling agents supply the funds for current operating expenses during the canning season.

salmon packers were forced to rely on wholesale grocers and eastern brokerage firms for financial aid. At the same time, the marketing of the product was left in the hands of those interested in financing the packers. The feasibility of using marketing outlets established for other food products was recognized very early by the salmon canners. Grocery brokers soon established themselves as middlemen essential to the marketing of the new food product. As the industry reached considerable proportions, the selling agents specializing in the marketing of canned salmon became of increasing importance. By 1917, the Federal Trade Commission reported that 116 companies sold 4,934,974 cases of salmon through selling agents and 1,938,947 cases through brokers.¹⁴⁴

With the growth of more powerful salmon-canning companies, resulting from integrations, mergers, and consolidations, a material change took place in the methods of marketing canned salmon.

Data concerning the comparative salmon pack of several American companies have already been given (page 48). The six companies listed produced 46.56 per cent of the total salmon pack for 1933. On other occasions, the same group has produced a larger percentage of the total pack. From the data given, it can be seen that the Alaska Packers Association and Libby's together produced 21.77 per cent of the pack. These two companies are branches of large packing organizations. The Nakat Packing Corporation, which controlled 5.03 per cent of the pack, is a chainstore-owned firm, while the remaining three firms listed, which account for 19.76 per cent, are nominally independent, and as far as salmon-packing companies go, are well financed. The remaining 54.44 per cent of the pack was made by smaller companies.

SELLING AGENTS, THE FUNCTIONAL MIDDLEMEN

The four channels of distribution found in the salmon industry are:

1. Manufacturer to selling agent to wholesaler to retailer to consumer.
2. Manufacturer to retailer (chain stores) to consumer.
3. Manufacturer to wholesaler to retailer to consumer.
4. Manufacturer to consumer.

The term "primary market selling agent," as used herein, means any person or firm having a bona fide contract for the exclusive sale of the entire output of canned salmon of at least one salmon canner and who is equipped to offer to the salmon canner nationwide distribution for his product, shipping, billing, and collecting facilities, market information, and other service, and whose compensation is a commission or brokerage paid by the seller.¹⁴⁵

¹⁴⁴ *Report on Canned Foods* (Canned Salmon), p. 21.

¹⁴⁵ *National Industrial Recovery Administration Hearing on Code of Fair Practices and Competition*. Presented by the Canned-Salmon Industry. Volume 2, p. 214. Jesse L. Ward, Official Reporter. February 27, 1934.

The above definition was contained in the application of the Pacific Canned Salmon Brokers' Association for permission to be included under the Code for the Canned Salmon Industry. In reply to a question from the Acting Deputy Administrator conducting the hearing regarding brokers and selling agents in the industry, Mr. Teal¹⁴⁶ replied that "there are both brokers and primary selling agents. We make the distinction in our definition. The primary selling agent furnishes certain facilities and performs certain acts in connection with his principal which the ordinary brokers do not do."¹⁴⁷

Mr. Sam T. Millar of the Executive Committee of the National Food Brokers' Association submitted for the consideration of the Code Board a definition which had been agreed upon by his association and its members. It read as follows:

The term "food broker" means any independent sales agent who performs the services of negotiating the sale of food and/or grocery products for and on account of the seller as principal, and who is not employed or established by, nor an affiliate or subsidiary of, any trade buyer, and whose compensation is a commission or brokerage paid by the seller.¹⁴⁸

SELLING AGENTS AND BROKERS FINANCIALLY INTERESTED

Proprietary labels and brands of selling agents have become common in the field of canned-salmon marketing. The policy of these primary selling agents has been twofold; namely, (1) to build up a demand for canned-salmon products bearing their labels, and (2) to provide themselves with an adequate supply of quality products on which to place these labels. The latter policy has resulted in selling agents as well as brokers becoming definitely interested in the salmon-packing business.

The statement in the Federal Trade Commission's Report that¹⁴⁹

Most of the large salmon brokers own or control directly one or more canning companies, which bring them into close touch with the canners and into sympathy with their interests. Some of the brokers, through advances of money, through sales contracts, or in other ways practically control the output of several canners.

is more true today than at any time in the past. While some of the selling agents do not own stock in any of the canneries, the selling agency or brokerage officials readily admit that they hold cannery stock, as individuals, within their organization.¹⁵⁰ Other instances of the close relationship between the selling agency and the cannery business are very common. Stock ownership and loans provide the basis for the selling-agent control of small canners.

¹⁴⁶ Mr. G. C. Teal, Secretary of the Pacific Canned Salmon Brokers Association.

¹⁴⁷ Hearing on Code, *op. cit.*, p. 215.

¹⁴⁸ *Ibid.*, p. 218.

¹⁴⁹ Federal Trade Commission. Report on Canned Salmon, 1919. *Op. cit.*

¹⁵⁰ Conversations with several selling agents.

SELLING AGENTS AND BROKERS MAINTAIN POSITION IN INDUSTRY

Selling agents provide the principal medium of contact between the producers and the buyers of canned salmon. This group of middlemen experienced considerable difficulty in maintaining their position in the period from 1922 to 1931, but since then selling agents' sales have been on a definite up-grade.

When the United States Federal Trade Commission made its study of the salmon industry,¹⁵¹ 80 per cent of the salmon pack was marketed through selling agents. According to G. C. Teal, Secretary of the Pacific Canned Salmon Brokers Association,¹⁵² the trend from 1931 to 1934 was as follows:

<i>Year</i>	<i>Percentage sold by selling agents</i>
1931	48.73
1932	60.27*
1933	63.42
1934	65.28

* It is believed that this increase can be accounted for, in part, by cannery sales departments turning to sales agents and brokers to market sizable quantities of canned salmon which could not be disposed of through the cannery sales organizations. This policy is frequently followed when stocks are moving slowly. There is also a possibility of a slight difference in the classification of distributors; a careful check, however, has shown this to be a negligible factor.

There has been also a certain amount of shifting in the number of canneries marketing through selling agents. In 1917, 53 of the 115 canneries reported sold their entire pack through selling agents, and 24 canneries sold part of their pack in that manner. At the same time, 18 canneries sold entirely through brokers, and 32 sold partly through brokers. Mr. Teal states that "No absolute records covering the next question (about the number of canners marketing through the medium of sales agents) are available, but a fair check-up shows 94 canners marketing through selling agents, and 100 marketing through cannery sales departments." Many of the canners utilizing their own sales departments, however, sell a considerable volume of their products through outside brokers.¹⁵³

NOMINALLY SEPARATE SELLING AGENTS

In gathering any statistical data relative to the sales of canned salmon made by selling agents or brokers, one is confronted immediately with the problem of distinguishing between a selling agency and a sales department. It is a common practice in the canned-salmon industry either for the officers of

¹⁵¹ *Op. cit.*, p. 50.

¹⁵² Correspondence with Mr. Teal. Letter dated October 20, 1934.

¹⁵³ Sam T. Millar of the National Food Brokers' Association stated in the Code hearing that approximately 75 per cent of the canned salmon is sold through selling agents and brokers.

the canning company to operate the selling agency and draw the stipulated commission from the producing concern, or for the selling agents to control the canneries. These agencies also operate as selling agents for other canneries wherever possible. Such interlocking of interests is found in the case of the G. P. Halferty Corporation; the Alaska Pacific Salmon Company and the Skinner, Eddy Corporation; the Deming-Gould and Company and the Pacific American Fisheries; the Nakat Packing Corporation and the Atlantic-Pacific stores; and the Red Salmon Canning Company and the Frank B. Peterson Company. Many other instances are found in the industry at present, and, though sufficient data are not available to give any definite figures, selling agencies of this character seem to be increasing. A pertinent comment made by the Federal Trade Commission indicates the possible reason why salmon canners are always on the verge of bankruptcy while the same group of men operating selling agencies seem to make a respectable profit. The statement follows:¹⁵⁴

It is common in the canned-foods business, and notably so in the case of canned fish, to have the entire pack of canneries handled by exclusive sales agents, their exclusive field covering either a given locality or the whole market. In many cases the packers or stockholders in the canning companies are interested in the selling agency. In some cases the two organizations are identical. In such cases the costs of the selling agent should be added to the cost of the canning company, and the profits made by the selling agent should be regarded as intercompany profits and not included in the canning companies' costs. A commission of 5 per cent, which is often received by sales agencies, has yielded a very large profit to such agencies, and where they are virtually identical with the manufacturing company, such profits are not properly included in cost.

CONTRACT BASIS OF RELATIONSHIP

The basis of the relationship between the selling agent and the packer is a contract. In nearly all cases the contracts are entered into before the pack is shipped to Seattle for storage; one often finds, however, that the brokerage connections are made on short notice after the shipments have landed. Some prominent selling agents have adopted the policy of attempting to obtain the entire pack of a given cannery or a number of canneries over a number of years with the idea in mind of building up a reliable and mutually profitable relationship between the canneries, the selling agents, and the market. In discussing this matter with many of the selling agents, the writer finds that it is one of the most desirable relationships between packers and selling agents in the industry. Such an arrangement affords the selling agent a reliable source

¹⁵⁴ Federal Trade Commission Report, p. 79. *Op. cit.*

of supply of canned salmon (both as to quality and quantity),¹⁵⁵ as well as insures him a product on which he need have no fear of placing his proprietary label.

RATE OF COMMISSION

With respect to the commission allowed, the contract between the selling agents and the packers is supposed to be uniform throughout the trade. Special allowances, however, frequently make a material difference in the actual amount received. For selling agents in the primary market, a commission of five per cent of the gross-sales price is allowed. In case the primary agent has established a relationship with a secondary broker in a secondary market, this commission of five per cent is divided equally between the primary and the secondary agency. Such an arrangement as the one mentioned above was recognized in the Code for the industry.

PRINCIPAL-SELLING AGENT AGREEMENTS LACK UNIFORMITY

There is a complete lack of uniformity in the contractual relations between selling agents and their principals relating to sales promotion policy, methods of paying commission, and the extent of the authority of the agent to act for his principal in contracts with buyers. This absence of regularity was aptly accounted for by F. A. Tiffany of F. J. Comeau and Company when he observed that the extent to which the financial activities of the principal are conducted by his selling agent rather than himself, depend primarily upon his faith in the agent with whom he is dealing. In other words, the selling agent acts completely for his principal in the sales transaction by concluding all contracts with the buyer, receiving payment for the merchandise, and remitting the money to the packer or principal after deducting his commission; or, the selling agent acts in a limited capacity as sales representative only, the financial transactions being conducted between the seller and buyer.

EFFORTS TO STANDARDIZE MIDDLEMEN'S COMMISSIONS

The question of contractual relations between the selling agents and the packers has long been of paramount importance to the canned-salmon industry. Individualism has characterized all members of the trade in many respects, while definite cooperation has been attained in other instances. In recent years, definite steps have been taken to bring about some regularity in the commissions, allowances, etc., paid to selling agents and brokers.

¹⁵⁵ It is recognized by the salmon trade that there is a material difference in the quality of salmon contained in the cans offered to the public. This difference is prevalent even in goods advertised in the same price class and grade. Selling agents possessing brands of their own attempt to maintain a standard quality, this being best assured through contractual relations with a given producer.

The movement for a uniform standard of trade practices took definite form in 1931 with the organization of the Pacific Salmon Sales Corporation, which signed contracts with fifteen producers whose combined production accounted for about one-fourth the world output. The new sales company was to engage in direct selling, and to supervise the sales activities of the fifteen companies. Whenever possible, the corporation followed the policy of working through the existing primary-market selling agents and brokers. The plan failed in 1932 because of strong opposition from established agents and brokers and lack of cooperation from packers. The services performed by the selling agencies differed, and the packers paid correspondingly different prices to have their merchandise sold.

Variations in the commissions paid to selling agents and brokers continued to be a point of contention in the trade, and when the Code was being formulated, an attempt was made again to remove the obstacles in the way of trade harmony.

CODE PROVISIONS GOVERNING PAYMENT OF COMMISSIONS

The Code for the industry had two principal objectives. First, it was the intention of the members of the cannery group to eliminate sales to chain stores in which the chain store received the customary brokerage fee or commission of five per cent, in view of the fact that the brokerage or selling function had been performed by the chain store buyers. The second objective was effectively to banish the so-called "dummy" brokers who acted as selling agents for the packers, and at the same time served as representatives of the buyers. The stipulated commission of five per cent was divided, in most cases, between the buyer and the selling agent.

These provisions created another difficulty. The large brokers in the secondary markets of New York, Chicago, and St. Louis, who had also been accustomed to receiving a stipulated commission of five per cent, would only be entitled to half the standard commission allowed the primary agents. They contend that they perform in the secondary markets for canned salmon functions just as essential as those performed by the primary agents on the Pacific Coast. The easterners further claim that the maintenance of proprietary labels and advertising, and keeping the packers supplied with reliable market information, warrants payment of a commission of five per cent. Since these agents were not parties to the Code agreement and were not members of the Pacific Coast association, it was impossible during the operation of the Code to invoke any arbitrary rule so far as they were concerned.

The primary selling agents are emphatic in their contention that the most disturbing force in the industry is the fact that some packers sell

through field brokers and chain stores at the regular commission (or discount in the case of chains) of five per cent that is ordinarily allowed the primary agents. This policy, according to the primary agents, is simply a case of unfair competition, because it places the competitive buyers who obtain their supply through the regular marketing channels at a distinct disadvantage. The commission allowed the secondary selling agents places them in a position to reduce the primary markets price. The relationship of some of the packers with the chain-store organization is somewhat on the same plane.

An attempt was made in the Code to correct trade abuses of the character mentioned above by incorporating in the trade-practice rules the following provision:¹⁵⁶

No member of the industry shall sell any canned salmon except upon the basis of his open price. The term "open price" . . . means a price which is published or available for the equal information of other members of the industry and of all buyers. "Price" includes not only the money consideration involved in a sale, but also all other terms of the sale such as terms relating to delivery, payment, discounts (cash, quantity, etc.), rebates, freight and insurance, warehousing, and other matters. . . . the Code authority shall prescribe general rules for the classification of buyers designed to prevent a classification without economic justification and to prevent a classification upon the basis of service required from the seller and/or rendered by the buyer. . . . the Code Authority shall also prescribe rules relative to the methods by which a price shall be published or made available. Nothing herein or in any rules prescribed shall prevent any member of the industry from changing his open price at any time or from time to time upon publication of the changed prices in accordance with the provisions of such rules.

THE SELLING AGENT'S DUTIES

Whenever the selling-agency system for marketing canned salmon is utilized by the packers, we find the goods flowing to the consumer in one of the following ways:

1. The selling agent acts as the intermediary between the packer and wholesaler, and the wholesaler sells to the retailer who in turn places the goods in the consumer's possession.
2. The selling agent operates through his field or secondary broker. The secondary broker contacts the wholesaler and arranges for the sale of the products. The remainder of the process is given above.
3. The selling agent sells to chain stores.
4. The selling agent operating through his field broker sells to chain stores.

¹⁵⁶ The Code for the industry does not include the selling agents as participants. An effort was made by the brokers to be included as principals in the Code Agreement, but at the time of the hearing on the Code in San Francisco, the selling agents were refused the right to participate. However, the trade practice rules of the industry are directly applicable to the selling agents, inasmuch as all selling is carried on in this manner.

Since the selling agent-secondary broker channel involves the greater number of middlemen, the description given below will serve to illustrate the nature of the activities carried on by both groups under such arrangement.

The selling agents maintain connections with brokerage firms in practically all of the important cities of the United States. It is the duty of these secondary-market brokers to contact the trade, take orders, and transmit a "Report of Sale" to the primary-market selling agent for confirmation. When the orders are confirmed by the primary agent, they are then returned to the secondary broker with a contract which is to be signed by the buyer. This sales contract is made out in triplicate in the office of the primary agent. The original copy is returned to the primary-market selling agent, a copy is given to the buyer, and the third is kept by the secondary broker, after all signatures have been obtained.

Shipment is made in accordance with the terms and conditions of the sales agreement. A shipping order is sent to the warehouse, the goods are carefully examined by the commercial examiners to eliminate all "swells" (defective cans), and labels are placed on the cans. The salmon is then shipped to the buyer on an Order Bill of Lading. There is usually a proviso in the bill of lading for the examination of the goods by the buyer at the receiving station without surrender. A ten-day draft (dated on the shipping date) is attached to the invoice and it is necessary for the buyer to pay for the salmon, or make suitable arrangements for payment, before he can obtain possession.

PRIMARY-MARKET SELLING AGENT SOMETIMES ELIMINATED

Methods of marketing Columbia River canned salmon differ from those used elsewhere. The differences, while small, can be accounted for by the early development of the Columbia River canning industry, and the fact that the larger part of the pack was marketed on the Atlantic Coast and in England. The Columbia River fisheries came into prominence between 1870 and 1880 when the Oregon country was practically unsettled. The financing of the cannery operations was carried on to a large extent by eastern capital, and the product was marketed by eastern firms.

The traditional Columbia River Chinook flat one-pound cans are today demanded by the English trade in preference to the tall one-pound cans adopted by the Puget Sound and Alaska packers. On examining the import records from England, one finds that the English trade still shows a distinct preference for the salmon packed in the flat containers.¹⁵⁷

¹⁵⁷ Report submitted to the *Pacific Fisherman* by Messrs. Henry W. Peabody & Company of London.

DIRECT CONNECTIONS BETWEEN PACKERS AND EASTERN BROKERS

The practice of marketing salmon through brokerage connections in New York and London continues, in part, even to the present day. A large percentage of the high-grade Columbia River canned salmon is shipped directly from the canneries in the West to the selling agencies in the East, with whom contractual arrangements to market a definite percentage of the annual pack of Chinook salmon usually exist.

The marketing is done under the brand name of the selling agents, the packer, or under private brands of the buyers. With such an arrangement, the primary agents located on the Pacific Coast are eliminated from the marketing; the commission ordinarily allowed the primary agent is saved to be expended, in part at least, by the payment of additional fees and higher discounts to the eastern representatives.

While custom still leaves its mark on the Columbia River canned-salmon distribution system, it is becoming more and more common to find that the canners of Chinook are turning to the primary selling agents on the Pacific Coast or establishing their own selling departments for the marketing of their products. It is not uncommon to find that some of the larger cannery organizations have acquired canneries on the Columbia River to pack the Chinook salmon from that area in order to have a complete line of products from their salmon canneries.

The advantage of an early start in canning high-quality salmon for the domestic and English export trade has done much to maintain the Columbia River Chinook salmon in the domestic and English markets at premium prices. (See Table 16, page 102.)

FOREIGN DISTRIBUTION

Selling agents and brokers provide the salmon packers with the principal means for marketing their products in foreign countries. Inasmuch as the sales of canned salmon are extremely small in all countries except the United Kingdom, the general policy is for the primary-market selling agents to establish a working agreement with general export brokers. Such firms have their foreign representatives who carry on the necessary sales work in their country. With the exception of a few direct sales between packers and large buyers (wholesale), the export market for canned, frozen, and mild-cured salmon is in the hands of a group of general brokers who specialize in caring for the export trade. Under conditions of this kind, salmon might constitute a large

part or a small part of the merchandise sold abroad by a given brokerage concern.

The arrangement between the primary agents and their foreign representatives is sometimes based on a written contract, but usually it is merely a mutual understanding between the two parties. A stipulated commission is paid to the foreign brokers on each sale. Terms of sales are usually cash, f. o. b. Pacific Coast shipping point, or cash on arrival.

The Columbia River packers, who have always depended on the English market as an outlet for a considerable percentage of their pack, ship directly to England when sales are made by their London representatives.

Large packing companies engaged in an export trade in canned salmon along with other canned foods have established marketing outlets for their entire line. No special arrangement for salmon is necessary under such conditions. In the countries where salmon exports are but a minor factor, general export agencies act as the intermediary for salmon packers.

MANUFACTURER-RETAILER SALES (CHAIN STORES)

The growth of the chain-store organization in recent years has created a new type of outlet for the numerous salmon canneries. As far as the packers are concerned, this new agency provided another outlet for their products, but for the selling agents it has provided a new source of competition.

Wherever the chain stores are utilized as a marketing channel for canned salmon, the wholesaler as well as the selling agent is usually eliminated from the transaction. The purchases are made directly from the canners. In many cases, the chains contract to take the entire pack of one or more canneries, thereby saving the packer practically all of the usual expense incurred in marketing his products.

In competing with the independent buying organizations, sales agencies have agreed to split their commissions with these buying groups if they operate through the selling agency. Cognizance of this fact was taken in the Code for the industry. (See discussion of "Fair Trade Practice Rules.")

S. H. Gray, editor of the *Pacific Fisherman* and perhaps the best-informed person on the general problems of the industry as a whole, expressed the opinion that the chain-store distribution problem is the most aggravating condition in the industry at the present time. The reasons are to be found in the policy of the chains in buying directly from the canneries, receiving special (in most cases secret) discounts for volume purchases, and allowances for advertising, labeling, etc., and at the same time practically eliminating the

sales agents as representatives of the packers. Unfair competition is charged against the packers who deal directly with chain stores and grant special discounts.¹⁵⁸ The arrangement to pay the customary brokerage fee to the buyer has simply sidetracked the selling agents.

THE ROBINSON-PATMAN ACT

The salmon industry, like other manufacturing industries engaged in the marketing of goods, will undoubtedly be affected by the Robinson-Patman Act which became a law in June 1936. This piece of legislation, passed by the Congress of the United States in 1935, has as its purpose the prevention of arbitrary price discrimination on the part of producers who sell to middlemen, "where the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination or with customers of either of them." (Section 1a, Robinson-Patman Act.) The Act was sponsored by congressmen interested in curtailing the activities of chain stores in the field of merchandising commodities. To accomplish this purpose and to meet the persistent demand of certain pressure groups for legislation to prevent further expansion of chain stores, Congress directed its attention toward destroying the price advantage the chain stores have customarily obtained through large-scale buying. If the new law is rigidly enforced, chain stores will no longer be able to obtain lower prices on canned salmon by buying directly from the salmon packers. Subsidiary concerns created by chains will no longer serve as an excuse for price concessions which, in the past, have often been granted.

The enforcement of the Robinson-Patman Act is vested in the Federal Trade Commission. Thus far the Commission is proceeding cautiously with its enforcement policy. It remains to be seen whether this new law will be the solution to the chain-store problem in the salmon-canning industry.

¹⁵⁸ Whether the chain organizations have an advantage over the small buyers as a result of receiving the commission ordinarily paid to the selling agents is problematical. Any advantage accruing to the chain stores must come as a result of economies from performing the marketing functions previously carried on by middlemen. The question revolves around these points: (1) are all the functions performed by the selling agents necessary, and (2) is the net cost of the canned salmon purchased through chain-store buying organizations less than that purchased through selling agents. The Federal Trade Commission studies on *Chain Stores, Prices and Margins of Chains and Independent Distributors*, in Detroit, Memphis, and Washington, D. C., (Senate Document 62 and 69, 1st session, 73rd Congress, and Senate Document 81, 2nd session, 73rd Congress), throw considerable light upon this whole subject of chains and independents; they do not deal specifically, however, with the subject discussed above.

PACKERS NOT BOUND TO ANY ONE METHOD OF MARKETING

Frequently, packers utilize many methods of marketing their products. There is no hard and fast rule in the canned-salmon industry as to the channels of marketing used. Consequently, it is often difficult to point to one firm as a typical illustration using one method of marketing. As a rule, packers use any method possible to dispose of their products, but there is a definite emphasis by some concerns on one method in preference to others under ordinary conditions.

MANUFACTURER-WHOLESALE-RETAILER DISTRIBUTION

Practically all packers who are not bound by an exclusive contract to a given selling agent or broker have indulged in direct selling to wholesalers. The manufacturer to wholesaler outlet is the principal distribution channel used by certain firms in the salmon-canning business, such as the California Packing Corporation, Libby's, and the Pacific American Fisheries. There are certain differences involved in the methods used by the three concerns mentioned; they will be used to illustrate this part of our study.

The California Packing Corporation, through its subsidiary, the Alaska Packers' Association, and Libby, McNiell & Libby serve as illustrations of the expansion of large food-packing concerns into the salmon-packing business. The California Packing Corporation acquired 79 per cent of the stock of the Alaska Packers Association in 1916.¹⁵⁹ At the same time, the company secured control of 69 other food canneries of various kinds.¹⁶⁰

The Alaska Packers Association markets its products through the California Packing Corporation in the United States and through Balfour, Guthrie and Company in England. The salmon is sold principally under three labels; namely, Del Monte, Argo, and Horseshoe. Many other brands are owned by this company and used to some extent.

Distribution of the stock of canned salmon takes place from the primary market in San Francisco. Stocks are maintained in the principal branches of the California Packing Corporation for sale to wholesalers. In other instances, shipments are made directly from the primary market to the purchasers.

The selling activities of the California Packing Corporation are directed primarily toward wholesalers, chain stores, large buying groups, and large buyers, such as state institutions and steamship lines. Canned salmon is merely a part of the complete line of canned-food products marketed by

¹⁵⁹ The California Packing Corporation now owns 83 per cent of the stock.

¹⁶⁰ *Western Canner and Packer*, October 1934, p. 15, Volume 26, No. 6.

the company. Since the Alaska Packers' Association is nominally a separate concern engaging the California Packing Corporation to market its goods, a commission of a stipulated amount is paid for the service rendered by the marketing agency. All advertising and other expenses essential to the marketing of canned salmon are borne by the California Packing Corporation.

A large amount of the products of the California Packing Corporation is sold under private brands, but it is doubtful whether such policy is as generally applicable to canned salmon as it is to some of the more staple commodities.

The California Packing Corporation serves as a selling agent for several smaller packing concerns in addition to marketing the pack of its subsidiary.

Libby, McNiell & Libby is an instance of a large cannery organization expanding into the salmon-packing industry. This company operated nine canneries in Alaska during 1934 to supply its trade. These producing units ship their output to the "Salmon Branch" of the company in Seattle, where the products are stored until orders are received from the respective branches of the company. The method used by the company to distribute its canned salmon can be described as follows:

After storing the season's pack at Seattle, about 300 salesmen operating out of the various offices maintained by the company carry on their selling activities with canned salmon listed as a part of Libby's complete line of canned goods. When orders for salmon are received, they are wired to the "Salmon Branch" and shipments are made direct to the buyers.¹⁶¹ (Buyers in this case are usually large wholesalers or chain stores.) Sometimes a small part of the pack of the Libby canneries is marketed through the medium of the regular brokerage channels.

Approximately 85 per cent of the product of the Libby salmon canneries is marketed through the Libby organization under the brand name of "Libby's;" the other 15 per cent is sold to buyers who market the product under their own labels.

The Pacific American Fisheries, which was first established in 1905, resulted from a merger of several smaller canning companies. This concern is engaged in the packing of fishery products only. It has established its own selling organization (Deming, Gould and Company) for the purpose of marketing its products. Deming, Gould and Company maintains constant connections with secondary agents in the secondary markets of

¹⁶¹ Interview, Mr. H. W. Souther, Assistant Sales Manager, Libby, McNiell & Libby.

the country. The relationship between the sales department and the brokers is retained by paying a stipulated commission. An additional commission is often allowed the larger brokerage houses due to the importance of the agency and the multiplicity of duties which fall upon it. This excessive commission has been a bone of contention in the trade for many years, and it was finally brought to a head with the signing of the Code for the industry. A discussion of this problem will be found at another point in this chapter.

Cooperative buying organizations are being utilized as a means of offsetting the advantages in buying power ordinarily attributed to chain stores. These groups deal directly with the manufacturer, and obtain price concessions from the packers sufficient to offset the discounts given to chain organizations. Practically all of the packers have received, or are receiving, a portion of the trade of these cooperative buying groups.

Approximately 35 per cent of canned-salmon pack of American companies is marketed through a manufacturer-wholesaler-retailer channel.¹⁶²

CANNERY SALES DEPARTMENTS OPERATE AS SELLING AGENTS

Some of the cannery sales departments contract to market the complete output of one or more outside canneries in addition to caring for their own products. The goods may be marketed under the brand name of the sales organization, or they may be sold under the proprietary labels of the small canneries. Where outside activities are carried on in addition to their own business, the uniform regulations as to commissions and discounts govern the transactions.

The establishment of a satisfactory sales department to perform the necessary functions in selling the salmon pack of a single organization requires considerable time and money. The packer must face the problem of meeting this outlay for advertising, salaries, and other expenses necessary in establishing his own selling unit, or he can continue to utilize the selling agencies already engaged in the marketing of salmon products. In the latter case, he has the advantage of a well-developed, and in many cases, a widely known organization with well-developed field connections.

¹⁶² The percentages quoted from Mr. Teal's letter regarding sales by selling agents refer to all selling agents regardless of the fact that the agency may be nothing more than a sales department for a large packer.

MANUFACTURER TO CONSUMER DISTRIBUTION

Approximately five per cent of the canned salmon marketed by American firms in 1933 was sold through retail stores owned by the company operating the canneries. The Nakat Packing Corporation, a subsidiary of the Atlantic-Pacific stores, produces all of the canned salmon to supply the company stores. This is an illustration of one firm performing all of the necessary functions to place the canned salmon in possession of the consumer. The Nakat Packing Corporation has its headquarters at Seattle, where it stores and assembles the products to be distributed to the secondary marketing centers for further dispersion among the retail stores.

THE SALES CONTRACT

The sales contract has been subject to controversy, charges of unfair competition frequently being leveled against opposing producers. To avoid strife within the industry, a movement for standardization of sales contracts was started with the organization of the Pacific Salmon Sales Corporation.

The short life of this corporation resulted in very little being accomplished toward this end. The period up to 1934 was one of extreme confusion in the industry. When the Code for the industry was adopted in May, 1934, however, the standards set up by the Pacific Salmon Sales Corporation were quite generally included in the fair-trade practices section of the Code. While the selling agents were not included in the Code arrangements, an attempt was made in 1934 to bring such agencies under the Code directly rather than indirectly.

During the summer of 1934 some of the selling agencies had modified their sales contracts in such manner as to comply with rules 4, 5, 6, and 7 of the "Trade Practice Rules from the Code of Fair Competition for the Canned-Salmon Industry."* The above sections of the Code were made necessary as a result of market conditions which developed during the 1931, 1932, and 1933 seasons. Competition was so unusually keen that canneries were offering special discounts and guaranteeing that the price of the canned goods purchased by buyers (except retailers) would be maintained by the seller for a stipulated period of time. In addition, orders were taken by the packers calling for delivery at an unreasonably distant date in the future, and rejected orders were often thrown on the market at de-

* Although the Code is no longer effective in its entirety, the present policy of the industry with respect to sales contracts is governed by the rules established under the Code.

structively low prices. These conditions resulted in the following restrictions being placed on the sellers:¹⁶³

1. Sellers are expressly prohibited from guaranteeing the canned salmon against a decline in price, "except on sales made between July 1st (March 1st for Chinook salmon and salmon packed on the Columbia River) and September 1st which may be guaranteed until September 1st against declines in the seller's price provided that such guarantee shall be limited to unshipped stocks, stocks in transit, or stocks in the buyer's warehouse (excluding retail stores) at the time the price is changed." (Rule 4)

2. Sellers are forbidden, except with the approval of the Code Authority, to accept orders for the delivery of the canned salmon more than "sixty days from the date of confirmation of the sale, except that Chinook salmon packed on the Columbia River may be sold for delivery up to December 31st of the year of sale." (Rule 5)

3. In case a shipment of salmon is rejected by the buyer for one reason or another, the seller is forbidden to dispose of the rejected merchandise except on the basis of the open price applicable to all such buyers. The Code Authority has the right to "rule otherwise in any particular case." (Rule 6)

4. Rule 7 is quoted:

Within thirty days after the effective date of this Code, the Code Authority shall prepare and submit to the Administrator for his approval forms of uniform sales contracts defining terms used in the trade, and on and after the thirtieth day after such approval no member of the industry shall sell any canned salmon except pursuant to such form of contract, except to the United States Government, any governmental agency, or any charitable organization wholly or partially supported by taxation.

In compliance with the above provision in the "Trade Practice Rules," the industry submitted to and had accepted by the Administrator a uniform contract embodying the following terms:¹⁶⁴

Terms of Sale: On local shipments—cash less 1½ per cent discount within ten days from the date of delivery. On rail or water shipments—cash less 1½ per cent not later than on arrival of shipment at final destination.

Shipment: "To buyer's address within sixty (60) days from date of confirmation of order, unless otherwise agreed herein. When non-receipt of buyer's labels delays shipment of goods within the time stipulated in this contract, seller shall immediately notify buyer goods are ready for

¹⁶³ Trade Practice Rules, Code of Fair Competition, rules 4, 5, 6, and 7.

¹⁶⁴ From a copy of uniform agreement sent to Administrator.

shipment and may within five (5) days from date of said notice ship the goods unlabeled with label allowance, but no allowance for cost of applying buyer's labels, or warehouse and insure for buyer's account and draw on buyer sight draft with documents attached. All carrying charges, including warehouse charges at the local public rate, plus interest at 6 per cent per annum shall be charged to and paid by the buyer if goods are not shipped after notice specified. Seller's option initial routing."

Marine Insurance: When goods are shipped by water, they are insured by the seller at the buyer's expense. The merchandise is insured for 110 per cent of the invoice value, plus freight charges.

Label Allowance: If goods are taken unlabeled or under the label of the buyer, an allowance is made on the following basis per dozen: Talls \$1.50, Flats \$1.25, Halves \$1.00, Quarters \$.75. In case unlabeled shipments are made to the buyers, no allowance is made for the cost of applying the buyer's labels.

Guarantee: The seller guarantees all canned salmon sold under the terms of the contract to comply with the provisions of the Federal Pure Food and Drugs Act, but he assumes no responsibility for misbranding when the merchandise is sold under the buyer's labels. In order to enforce the provisions of the guarantee, the purchaser is required to warrant that he will not label the canned salmon purchased under the terms of the contract "in violation of Rule 8, Article VII, Code of Fair Competition for the Canned Salmon Industry."

Liability: Upon the delivery of the merchandise to the carrier by the seller, and the receipt from the carrier of a "clean bill of lading, recognized receipt for shipment, or other shipping document," the seller is relieved of further responsibility. The responsibility for loss through "marine disaster, war risk, shortage, loss, delay or damage by accident or negligence on the part of the carrier, rest with the buyer."

To protect themselves against certain contingencies which frequently arise in the salmon-canning industry, the following terms were incorporated in the contract under the liability section:¹⁶⁵

Seller shall not be liable for short, late or nondelivery of goods resulting from short or late run of fish, strikes, fire, flood, marine casualty, Government, State or Municipal action, or other uncontrollable circumstances, save that all stock available after such shortage is discovered, shall be distributed as equitably as possible to all buyers without discrimination.

Further to guard against the possibility of loss through legal action, the new sales agreement stipulates that¹⁶⁶

Tenders under this contract constitute delivery to extent of the quantity tendered,

¹⁶⁵ From a copy of uniform agreement sent to Administrator.

¹⁶⁶ *Ibid.*

and that it is not necessary for the packers to re-tender canned salmon to take the place of rejected or seized merchandise. Naturally,

A rejection of any tender under this contract shall apply only to tender of size and grade specifically involved in shipment in controversy and shall not affect other items in this contract.¹⁶⁷

Claims: Claims may be handled in one of two ways. The packers may make an allowance of one-fourth of one per cent in lieu of any claims that might be filed by the buyer to care for "swells" within a stipulated period of ten days. For all other claims against the packer, the buyer must submit his demand within ten days.

Disputes: Disputes arising under the contract are to be submitted to arbitration before a National Arbitration Board in Seattle, San Francisco, New York, or Chicago, or in any other city in which a board mutually agreed upon can be found as provided under the provisions of the National Uniform Plan of Arbitration.

The members of the industry are permitted to supplement or change the sales contract by attaching the written agreement of the buyer and seller, providing such alterations do not conflict with the terms of the "Trade Practice Rules from the Code of Fair Competition of the Canned Salmon Industry," or enable the seller to give more liberal terms to the purchaser than the uniform agreement contains.

SEASONAL VARIATION IN SHIPMENTS

The movement of salmon from the producer to the buyers occurs throughout the year. The high point of the shipping season is reached during the months of August and September following the closing down of the majority of the salmon canneries. Minimum shipment usually takes place in the months of April and May, immediately preceding the opening of the spring canning activities on the Columbia River.

The bulk of the sales orders are taken well before the shipments are made, and in many instances before canning operations start. Alaska salmon products are placed on the market between July and October, thereby causing tremendous activity in the selling and shipping departments during the three or four months in which the goods are being taken care of from Alaska. Other producing areas furnish the market with a supply of freshly canned salmon any time from the first of May until the end of No-

¹⁶⁷ From a copy of uniform agreement sent to Administrator.

vember. The supply coming on the market from the Columbia River, Puget Sound, and the coastal districts extends the canning season until the first part of December. Unsold stocks are then worked off during the winter and early spring months while the canneries are closed.

SHIPPING FROM PRIMARY TO SECONDARY MARKETS

Except for distribution throughout the Pacific Coast area, most of the canned salmon shipments from Seattle as well as the other primary-market cities on the Pacific Coast are made by boat to the eastern part of the United States. Though it may seem strange to one unfamiliar with the transportation problems of some of the major West Coast industries, a considerable quantity of this canned salmon that passes through the Panama Canal destined for New York, Boston, or other Atlantic seaboard ports is distributed as far west as Chicago.¹⁶⁸

Ocean-going transportation has been found far more economical for the buyers of salmon products than rail, even though the intercoastal shipments entail the additional charge of transshipping to the Great Lakes area from the New York terminals.

It must be kept in mind that the canned-salmon sales are all made to the buyer on terms f.o.b. Pacific Coast shipping point, and the buyers are particularly susceptible to the price differentiation often resulting from higher shipping charges from the producing markets. Hence the buyers have turned to the use of ocean transportation as the most advantageous because of lower rates and a lower minimum weight allowance.

Salmon canners have made several attempts to induce the railroads to lower the minimum weight allowed on carlot shipments to the interior,¹⁶⁹ but thus far these efforts have proved unsuccessful. In 1930, the rail carriers requested the Pacific Canned Salmon Brokers' Association and the salmon packers to aid in obtaining for the railroads a larger volume of the canned-salmon shipping business to the east. The principal points covered in the recommendations to the railroads were reduction of rates and minimum weight allowances on carload shipments. The railroads replied that they "could not see sufficient increase of business to allow the decrease in weight."¹⁷⁰

¹⁶⁸ Interview with F. A. Tiffany of the F. J. Comeau and Company, Seattle.

¹⁶⁹ *Ibid.*

¹⁷⁰ *Pacific Fisherman*. Report of the activities of the Pacific Canned Salmon Brokers' Association for 1930.

Until 1930, intercoastal steamship lines and railroads had based their freight charges for canned-salmon shipments on a standard weight of 70 pounds per case for the one-pound cans packed in wooden boxes, and 40 pounds per case for the one-half-pound tins packed in a similar manner. This minimum-weight charge was generally acceptable to all parties concerned until the salmon packers began shipping salmon in fiber cases. The rail carriers continued to base their minimum-weight charges on the old standards, with the result that considerable difficulty arose between the packers, buyers, and carriers. The buyers refused to pay the excess charge levied against them for freight when the merchandise arrived, or if they did pay the charges, they billed the shipper for the difference. To avoid the loss of goodwill, the packers frequently paid the claims, which entailed considerable loss on each shipment.¹⁷¹ The matter of excessive freight charges was settled in 1930 at the United States Intercoastal Conference of steamship companies with the acceptance of the following schedule of weights as standard for freight shipments:¹⁷²

Fiber cases:	Pounds
1-pound tall cans	68
Halves	34
Wooden cases:	
1-pound talls, unwired	68
Halves, unwired	38
1-pound talls and flats, single wire.....	68
Columbia River-style cans,	
Halves, single wire	37
Alaska-style cans,	
Halves, single wire	38

Both the shipper and the carrier are given the privilege of checking the shipment weights if they so desire.

Since the institution of the foregoing standards, no complaints have been received by the shippers from their customers regarding freight overcharges.

SELLING AGENTS AS SPECULATORS

One of the principal reasons for friction between the selling agents and the packers is the speculative activities in which many of the agents and brokers engage. The packers complain that they are often deprived of a legitimate price for their products because of the buying and selling activities carried on by some of the selling agents.

¹⁷¹ *Pacific Fisherman*. Report of the activities of the Pacific Canned Salmon Brokers' Association for 1930.

¹⁷² *Ibid.*

Frequently, the selling agents have gone beyond their normal function of acting as agents for the packers, and have purchased the salmon pack at destructively low prices with the idea of taking advantage of a favorable market. This condition is possible when the packers are heavily indebted to banks for the operating funds which they have borrowed to carry on the season's activities and are forced to market their merchandise as soon as possible after canning to meet the loans when they fall due. Quick to recognize an opportunity of this kind, alert selling agents have sometimes purchased salmon on their own account to hold for higher prices. In some cases selling agents and brokers have been able to carry on a very profitable business while the canners were on the verge of financial collapse.

These speculative activities are officially frowned upon by the brokerage business, but prominent selling agents readily admit that the practice became so common that it caused considerable embarrassment to the group as a whole. Several members of the trade affirm, however, that the unethical practice of speculation among the selling agents during the past few years has been practically eliminated.

BUYING COMBINATIONS COMPETE WITH SELLING AGENTS

In addition to the chain store-field broker trouble, primary selling agents are running into difficulties in another direction, and as a result they are being hard pressed to maintain their position in the industry. This new obstacle is the organization of "buying combinations" created for the avowed purpose of eliminating the selling agent as a factor in the distributive machinery for canned salmon. These new "buying combinations" demand, and are receiving, the brokerage or commission ordinarily allowed the regular selling agents.

While the bulk of the business is moving through the older channels, the portion sold to buyers under special consideration places the buyers (wholesalers) who purchase through the traditional channels at a decided disadvantage in selling their products at a remunerative price.

It is evident to one who studies the distributive channels of the canned-salmon industry, that the marketing procedure has been, and will continue to be dependent on the same agencies for selling their products as are the manufacturers of other canned goods. It is also reasonable to assume that the shift toward more direct marketing of canned foods (manufacturer to retailer, etc.) will in time alter the important position now held by the selling agents and brokers in the canned-salmon industry.

X. SALES PROMOTION

Sales-promotion work in the canned-salmon industry has always been limited in scope. The elimination of advertising and selling expenditures from the calculations of salmon-packing concerns was until recently directly in line with the accepted policy of devoting little attention to the marketing of their products. Such an attitude can be explained as follows: (1) generally speaking, no difficulty was encountered in disposing of the annual salmon pack at reasonable prices; (2) small concerns were financially unable to advertise their goods; and (3) the policy of selling through brokers or selling agents relieved the packers of the necessity of advertising, as this task, when done, was assigned to the packer's representative.

BRANDS AND TRADEMARKS¹⁷³ (PACKERS)

Packers' and brokers' brands have been in use since the inception of the salmon-canning industry. Some of the brands used by the Hume brothers (beginning as early as 1870) are still in use,¹⁷⁴ and there is no doubt that many of the brands and trademarks included in the list of packers' and brokers' brands at the present time have their origin well back in the past century.¹⁷⁵

EXTENT OF USE

In 1934, there were 746 packers' brands and trademarks belonging to approximately 300 packers, as well as 322 brands included in the brokers' list.¹⁷⁶ Obviously, many of these brands are used very infrequently, if at all. Some of the larger packing companies have acquired dozens of brands and trademarks through the purchase of the properties of other canning companies, the less favored names being utilized only enough to maintain the proprietary rights.

The Alaska Packers Association controls 127 brands and trademarks; but the bulk of the company's products are sold under the "Del Monte,"

¹⁷³ Trademarks are merely copyrighted brands. Equal protection is given to unregistered brands whenever a vested proprietary right has been established by long usage.

¹⁷⁴ The Alaska Packers Association now controls "Hume's Flag," "Hume's Karluk," and "Red Diamond."

¹⁷⁵ Brokers or selling agents frequently supply small packers with labels for the canned salmon to be sold by them. Nearly all of the canned salmon is shipped to the primary markets unlabeled. In cases where a broker acts as a representative for several small concerns, it has been to his advantage to sell the products under his label rather than the packers' (if the packers have brands of their own).

¹⁷⁶ *Salmon Packers' Register*, 1934-35. Published by Pacific Fisherman.

"Argo," or "Horseshoe" brands.¹⁷⁷ A similar condition exists in the case of the Pacific American Fisheries, Incorporated, which owns or controls through lease, 141 brands and trademarks. This company likewise restricts itself to advertising a selected group of brands and uses the remainder only occasionally.

Approximately one-third of the canning companies (93) do not possess brands or trademarks, but depend on selling agents to supply labels, or the goods are marketed and resold under private brands. Practically all packers sell a part of their products unlabeled.¹⁷⁸

Through the development of large operating companies, permitting an economical maintenance of sales departments in their combined organizations, an added stimulus has been given the use of packers' brands.

SELLING AGENTS' OR BROKERS' BRANDS

Certain selling agents have developed a system wherein canned salmon sold by them bears their labels and brands to such an extent that practically all of it is marketed under their own brands. According to one of the officials of the Oceanic Sales Company, only 25 per cent of the salmon sold by that company is marketed under packers' labels, while 60 per cent is sold under the 26 brands of the selling agency, and 15 per cent under buyers' brands.¹⁷⁹ Other concerns specializing in the sale of canned salmon follow very much the same policy as that pursued by the Oceanic Sales Company.¹⁸⁰

Selling agents claim their reputation with the trade is much greater than that of their principals, whose business instability makes it necessary for the selling agents to build up their own clientele.

PRIVATE BRANDS OR WHOLESALERS' BRANDS

Wholesalers frequently utilize their own brands to market canned salmon. Since there is no difficulty involved in obtaining unlabeled canned salmon, and since wholesalers as a rule are not faced with the necessity of displacing widely advertised brands, it is very easy for private brands to be used in the marketing of this product. Whenever wholesale firms have adopted the policy of selling canned goods under private labels, canned salmon has been included in such arrangement.

¹⁷⁷ Interview. L. E. Wood, President, California Packing Corporation.

¹⁷⁸ Libby, McNiell & Libby sells about 15 per cent unlabeled. The Red Salmon Canning Company sells 20 per cent unlabeled.

¹⁷⁹ Leo White, Oceanic Sales Company, Seattle. Interview.

¹⁸⁰ McGovern and McGovern, Griffith-Durney Company, Kelly-Clarke Company, F. J. Comeau & Company, and others follow a similar policy.

The absence of widely advertised brands has resulted in a minimum of friction between the packers and wholesalers over the use of private brands.

VALUATION OF BRANDS AND TRADEMARKS

While a few of the salmon packers place a numerical value on their trademarks and include such items in their balance sheets, the general policy in the industry seems to be to omit such items from the list of assets. The Alaska Pacific Salmon Company has followed the policy of capitalizing a portion of its advertising costs, and by November 1, 1933, had included \$250,000 as the value of such rights.¹⁸¹ This company resulted from a reorganization of the defunct Alaska Pacific Corporation in September, 1933. The Pacific American Fisheries valued its trademarks at \$275,000 in 1933.¹⁸² Such firms as the British Columbia Packers, Limited; Alaska Packers Association; and the Columbia River Packers Association do not list trademarks among their assets. Libby, McNiell & Libby, the Booth Fisheries, and the Atlantic-Pacific market their salmon under nationally advertised brands used for all their products; hence, no value is especially attributed to salmon brands.

TYPES OF SALES MEDIA

Newspapers, magazines, outdoor advertising, radio, exhibits, and educational literature are used very meagerly to promote the sales of canned salmon. The advertising carried on through these media falls largely to the selling agents and distributors. Educational work is done by the Association of Pacific Fisheries and some of the larger packers.

ACTIVITIES OF SALES AGENTS IN SALES PROMOTION

Selling agents direct their efforts mainly in two channels; namely, toward cooperating with the distributors in advertising canned salmon, and in advertising their brands independently through the media suggested above. Both plans are in use wherever the agent assumes the obligation of selling and advertising. Such advertising is done in connection with brokers' or packers' brands. While newspapers and magazines have been the principal means of advertising, the radio and outdoor advertising have been utilized since 1932.¹⁸³

¹⁸¹ *Poor's 1934 Industrials*, p. 349.

¹⁸² *Moody's 1933 Industrials*, p. 203.

¹⁸³ The amount spent by selling agents is determined, in part, by their allowance for this purpose by the packers.

ACTIVITIES OF WHOLESALERS AND RETAILERS

Wholesalers have generally confined their sales promotion to assisting retailers with window displays and newspaper advertising. As it has long been the policy of salmon packers to give special rebates and allowances of one kind or another to large buyers in proportion to the amount of sales promotion work done and the volume of sales, many wholesalers have been able to conduct independent advertising campaigns in local newspapers, as well as to cooperate with retailers. The only personal sales work done by wholesalers is in connection with personal solicitation of retailers on all canned merchandise.

COOPERATIVE ADVERTISING

Two attempts have been made in the canned-salmon industry to conduct cooperative advertising campaigns. The first step in the direction of cooperation in sales-promotion work took place in 1926. Faced with a huge carry-over of canned salmon, the salmon packers organized the Associated Salmon Packers for the purpose of conducting a consumers advertising campaign designed to promote the sale of Pink salmon.¹⁸⁴ A fund of \$200,000 was contributed by the packers for the purpose of meeting the cost of advertising in 44 newspapers and numerous magazines and journals.¹⁸⁵ Recipe books on ways to prepare and serve salmon were distributed to housewives, and a salmon-recipe contest was conducted to stimulate further interest in the product. Since the campaign centered on Pink salmon, it was necessary to overcome the prejudice of the consumer against the light-colored flesh. This was done by calling attention to other qualities, such as its nutritive value and the high iodine content of that species of salmon.¹⁸⁶

The results of the campaign proved enlightening. The average annual carry-over of Pink and Chum salmon from 1919 to 1925 (July 1 inventory) was 1,000,000 cases. On July 1, 1926, only 387,000 cases remained in the hands of the packers. The Associated Salmon Packers estimated that 4.45 times the amount of Pink and Chum salmon "was sold and shipped by the salmon packers in the period concurrent with the advertising drive as in the corresponding first half of 1925, or 1,122,519 cases against 205,930 cases, an increase of 445 per cent."¹⁸⁷ The claim was also made that the

¹⁸⁴ *New York Journal of Commerce*, p. 10. August 28, 1926.

¹⁸⁵ The advertising firm of Erwin, Wasey and Company was employed to conduct the advertising campaign.

¹⁸⁶ *Printer's Ink*, September 23, 1926, pp. 65-68.

¹⁸⁷ *Ibid.*, p. 65.

packers received 50 cents a case more for the salmon during the 1926 season than they did during the year preceding.¹⁸⁸ With stocks materially decreased, interest in further cooperative advertising lagged. Packers' contributions were slow in coming in, and in some instances it was necessary to carry the claims for advertising expenses incurred in behalf of a few participants into court before collection could be made.¹⁸⁹ By 1927, the Associated Salmon Packers was practically out of the picture.¹⁹⁰

The second attempt toward cooperative advertising took place in 1932. Fifteen packers controlling one fourth of the world's annual salmon pack organized the Pacific Salmon Sales Corporation, employing Botsford, Constantine, and Gardner to conduct a cooperative advertising campaign. The expenses of the campaign were to be prorated among the packers on the basis of the number of cases sold. The new organization failed to obtain the cooperation from packers essential to a successful continuation of the plan, and at the same time met with the united opposition of the selling agents who would lose business if such a plan were successful.

By means of articles on the value of canned salmon as a food product appearing in magazines and trade journals, the Association of Pacific Fisheries carried on advertising work for the benefit of the industry as a whole during 1933 and 1934. Educational institutions are also supplied with information concerning the nutritive qualities of salmon, and its use in correcting certain dietary deficiencies. Books of recipes and educational literature of many kinds are prepared and distributed by the organization.

The third and most recent effort of the industry to conduct a cooperative advertising campaign was begun in 1936. The industry obtained the services of a prominent advertising firm to conduct the sales-promotion program which was financed by an assessment of five cents a case on each case of canned salmon packed by the members of the industry participating in the project. The promotion work involved the use of several kinds of sales media, including radio programs, outside advertising, recipe books, magazine advertising, and the employment of more color on the labels. The members of the industry participating in the cooperative endeavor for 1936 and 1937 voted to practically double the outlay for sales-promotion work during the next three marketing seasons. The new program of adver-

¹⁸⁸ *Printer's Ink*, September 23, 1926, p. 66.

¹⁸⁹ Interview with G. C. Teal, *op. cit.*

¹⁹⁰ The Associated Salmon Packers was active in 1935. The organization, in connection with the Pacific Canned Salmon Brokers Association, sponsored "National Canned Salmon Week" from March 1 to 9, 1935.

tising calls for a procedure similar to but more widespread than that followed in 1936 and 1937.

Present indications are that the 1938 salmon pack is one of the largest in history. With the carry-over from the preceding year, an especial effort will be made to move the pack as rapidly as possible.

COOPERATIVE ADVERTISING IN CANADA

In 1930, the salmon canners of British Columbia initiated a cooperative advertising campaign throughout the Dominion and England. The Canadian packers contributed a fund of \$65,000 to which the government later added \$25,000 to assist in the promotion of canned salmon. The advertising firm of McConnell & Ferguson, Limited, was employed to handle the campaign, and space was purchased in magazines and newspapers to bring the products to the attention of the consumers. Nutritional values and diversity of foods were emphasized in the campaign. A similar project was launched in 1932 with a fair success.¹⁹²

CONTAINERS

One-pound flat cans instead of the customary one-pound tall cans has characterized the Columbia River Chinook salmon pack for many years. These have been particularly acceptable to the English and South African trade. A rather unusual report submitted by the commercial attaché from the United States Department of Commerce stated that¹⁹³

It is believed that this preference is in a large measure due to the fact that salmon is served cold extensively and the contents of the flat tin placed on lettuce leaves and covered with mayonnaise makes a very attractive salad dish.

In the better-class foreign trade, the American red salmon is making progress in spite of the failure to supply the flat tins with a suitable re-label. The tall tin is gradually being accepted on the South African markets due to the substantial price differential between the American red salmon and the products imported by way of the United Kingdom.¹⁹⁴

Oval tins and one-quarter pound tins are now being used to a certain extent by American Salmon packers; the practice, however, has never become general.

¹⁹² *Pacific Fisherman*, Volume 29, No. 2, p. 115.

¹⁹³ *Foodstuffs 'Round the World*, Fishery News, Department of Commerce, Washington, D. C., September 2, 1932.

¹⁹⁴ *Ibid.*

NUTRIENT CONTENT OF SALMON

VITAMIN CONTENT

The outstanding quality claimed for salmon is vitamin D, the sunshine vitamin. Salmon contains sufficient amounts of vitamins A and D to correct certain dietary deficiencies. Tolle and Nelson stated in an article entitled "Salmon Oil and Canned Salmon as Sources of Vitamins A and D" that "salmon oil can be produced which is equal to good grades of cod-liver oil in vitamin A content and approximately twice as potent as cod-liver oil in vitamin D. . . . From data obtained on vitamin D content of the oil in canned salmon, it is quite apparent that there is more vitamin D in the canned salmon sold in this country than in the cod-liver oil used for both human and animal feeding."¹⁹⁵

While dieticians do not claim that fish consumed as a food can replace such standard dietary correctives as cod-liver oil, it is significant that the Home Demonstration Leaders of the College of Agriculture of the University of California are stressing the value of salmon and other species of fish for their vitamin content, particularly in the diet of the growing child.¹⁹⁶

PROTEIN AND MINERAL CONTENT

Since salmon products compete directly with protein-containing foods, it would seem desirable to make certain comparisons with other food products on the basis of protein, calcium, phosphorus, and iodine content. The following tables indicate that salmon rates well above certain staple foods with which it is compared. Such comparisons assume greater significance if viewed in relation to the cost per unit for the products under consideration.

¹⁹⁵ Tolle, C. D. and E. M. Nelson. *Salmon Oil and Canned Salmon as Sources of Vitamins A and D*. Journal of Industrial and Engineering Chemistry, September 1931. Volume 23, No. 9, p. 1066.

¹⁹⁶ Interview with Miss Hilda Faust, Home Demonstration Leader.

IODINE IN VARIOUS FOOD PRODUCTS¹⁹⁷

(Moist basis)	
<i>Food</i>	<i>Parts per billion</i>
Red salmon	405
Chum salmon	222
Lemon juice	136
Butter	106
Eggs	22
Wheat	19
Apples	6
Potatoes	18
Milk	5
Beef	5

COMPARISON OF PROTEIN IN A FEW COMMON FOODS¹⁹⁸

<i>Food</i>	<i>Per cent</i>
Salmon, canned	21.8
Beef, round	21.3
Veal, roast	20.7
Lamb, roast	19.7
Chicken	19.3
Mackerel, fresh	18.7
Haddock, fresh	17.0
Pork, roast loin	16.6
Pork, sausage	13.0

CALCIUM CONTENT OF SOME PROTEIN FOODS¹⁹⁹

<i>Food</i>	<i>Per cent</i>
Salmon, canned	.208
Milk, whole	.120
Egg	.069
Lamb, leg	.020
Beef, round	.012

PHOSPHORUS CONTENT OF SOME PROTEIN FOODS²⁰⁰

<i>Food</i>	<i>Per cent</i>
Salmon, canned	.338
Beef, round	.216
Egg	.180
Milk	.093

The advertising campaigns conducted by members of the industry have utilized these features of food values to some extent, but it is very doubtful if the industry has realized the possibilities of an advertising campaign of this character. The leaders in the industry might well look into the policy pursued by the milk industry in carrying the merits of its product to the consumers.

¹⁹⁷ Jarvis, Clough and Clark. *Salmon in a Diet for the Prophylaxis of Goiter*. The Journal of the American Medical Association, May 1, 1926, Volume 86, p. 11.

¹⁹⁸ *Essentials of Dietetics* by Pope and Geraghty, published by G. P. Putnam Sons, 1931, p. 206.

¹⁹⁹ *The Story of Salmon*, by Isabel N. Young, p. 33-35. Published by American Can Company, 1934.

²⁰⁰ *Ibid.*

XI. PRICING

THE HISTORICAL IMPORTANCE OF OPENING PRICES

The traditional practice of quoting opening prices²⁰¹ has lost much of its importance. Formerly, the opening prices on all species of canned salmon served as a basis for closing contracts between buyers and sellers, as well as serving as a price to be used on all future orders. Certain objectional features in the practice of quoting opening prices at the end of the canning season were mentioned by the Federal Trade Commission in its report on the canned-salmon industry.²⁰² Its declining importance is not due to the Commission's recommendation, but to factors outside the control of those directing the price policies of the respective salmon-canning companies. Opening prices are still quoted by practically all firms, but adjustments are made to meet changing conditions in the market. The conditions that brought about the change are found with varying intensity in practically all industries since the World War. The change in buying habits of consumers is soon reflected in the demands of the retailers on the wholesaler, and in turn on the manufacturer. Packers must be alert at all times respecting market conditions that necessitate immediate price adjustments to meet competition.

FUTURE ORDERS

The Federal Trade Commission also recommended that "sales subject to opening prices should be restricted."²⁰³ Orders placed well in advance of the opening of the canning season are usually based on terms similar to those quoted by Cobb in his work for the Bureau of Fisheries.²⁰⁴

The undersigned hereby authorize, Brokers, to book the number of cases of canned salmon specified below; said booking to be filed with packers for delivery from 1933 pack, subject to buyers' approval of opening prices when named; the option being granted buyers of confirming the total number of cases specified below; confirming a smaller quantity or declining any confirmation.

.....Brokers, furthermore agrees that buyers shall have the option of increasing quantities listed below, when he names the opening prices for his packers, contingent upon his ability to secure at that time an increased allotment from his packers. In event X. Y., Brokers, secures an increased allotment from his packers insufficient to meet all increases requested by his patrons, he will distribute such increase as he can secure among the dealers who have filed conditional contracts with him, according to the date order that said contracts have been received in his office.

²⁰¹ Published prices issued by the packers at the end of each canning season.

²⁰² Report on Canned Foods (Salmon), *op. cit.*

²⁰³ *Ibid.*

²⁰⁴ Bureau of Fisheries Document 1092, p. 584. *Op. cit.*

In the above arrangement, the buyer is left with a satisfactory exit in case the opening price of the packer is not to his satisfaction. Such protection is necessary to induce buyers to place their orders well in advance of the delivery date. The packer is obliged primarily to make delivery according to the terms of the contract in case the opening price is agreeable to the buyer.

When the packer agrees to sell his entire output to a large buyer on a "future" order, the opening price of the year constitutes the sum which the buyer will have to pay. In such a case, the contract is binding on both parties, and the options that seemed so liberal in the "future" orders placed with the selling agents are not operative.

OPENING PRICES AS AN ANNOUNCEMENT TO THE TRADE

Under present conditions, the announcement of opening prices by salmon packers is the same as any other manufacturer quoting prices on his products. The manner in which buyers of canned salmon react to the prices announced by the packers varies at different times. If the price quoted is too high in the estimation of the buyers, few sales are made, and many of the smaller concerns will lower the price quotations in an effort to encourage sales. The industry as a whole reacts very quickly to changes made in price quotations by any one firm, but it would seem that control of prices is well within the hands of certain of the larger packing concerns and that it is possible for small canners to have but little effect on prices under ordinary supply-demand conditions.²⁰⁵

Prices are set in the salmon industry at present in a manner similar to the procedure followed in other lines of business. The smaller canners have a tendency to wait until the large packing concerns announce their opening prices before taking any action. Variations in quoted prices do exist, but such differences are relatively small. It is only natural that some of the smaller organizations should adopt a selling policy based on a price appeal to the trade.

FACTORS AFFECTING THE PRICE OF CANNED SALMON

A careful study of the prices quoted on Chinook, Alaska Red, and Pink salmon over a period of thirty-five years indicates that several factors affect the market price of the various grades of salmon. Supply of the product, consumers' demand, the probable control of the industry by certain large interests, the price of competing products (protein foods), and consumers' purchasing power have an appreciable bearing on the prices at which the products are sold.

²⁰⁵ Prominent packers admit that several of the large companies are quite capable of controlling prices, except in a few instances.

SUPPLY

The opening-price quotations provide the only available and the most satisfactory basis for showing price trends over a long period of time. While it is recognized that they do not disclose the price fluctuations during a given year, nevertheless, they indicate the trend in prices from season to season. Up to 1925, the opening prices indicated fairly well the price at which a large percentage of the canned salmon was sold. Based on this assumption, the opening prices were used in preparing the charts of production and prices since 1900.

In the series of charts given on the following pages, it will be noticed that there is seemingly a greater degree of relationship between production and price on Alaska Red salmon than either Chinook or Pink. The growing market for Pink salmon in recent years probably accounts for the fact that the production and price figures have gone upward simultaneously. In considering a supply-price relationship, it would be well to consider the annual carry-over figures for the short period of time for which they are available. The statistics on carry-over do not go back far enough to warrant a very definite statement as to the effect of these inventories on prices; but it would seem that the close relationship reflected in the carry-over and prices since 1928 might exist prior to that date.

From the data available, several points of real significance can be gleaned. The industry has established definite price levels on the species of canned salmon. Over the thirty-five-year period, the species have always been priced from high to low as follows: Chinook, Sockeye, Alaska Red, Coho, Pink, and Chum. In every instance, the price trend on all species has been upward. For Pink and Chum, there has been very little relation between the pack and the price trend since 1900.

Mention has been made elsewhere in this study of the closing of the Bristol Bay fishing district during the 1935 season. In this connection, it is worth noting that one of the largest producers of Alaska Red salmon was unable to market a heavy pack during the 1934 season. This firm was faced with the necessity of reducing its price to move the excessive supply on hand, or holding the canned salmon until 1935 and 1936. The probable shortage of meat products during 1935, together with the possibility of being kept from its customary fishing grounds for one season, resulted in the company's decision to hold its merchandise until the next year.

CONSUMERS' DEMAND

Statistical data relative to the demand for canned salmon are most inadequate. Certain conclusions can be drawn from the supply-price schedules

Table 16. OPENING PRICES PER DOZEN 1-POUND CANS, 1890 TO 1937.

Year	Chinook	Alaska Red	Alaska Pink	Puget Sound Sockeye
1890	\$1.40	\$1.20	\$.75	\$
1891	1.35	1.20	.75	.....
1892	1.35	1.15	.75	.....
1893	1.32½	1.17½	.65	.....
1894	1.35	1.10	.60	.....
1895	1.32½	1.15	.80	.....
1896	1.25	1.10	.75	.....
1897	1.05	.95	.65	.80
1898	1.05	.97½	.65	.80
1899	1.25	1.10	.67½	1.10
1900	1.60	1.25	.75	1.10
1901	1.50	1.25	.75	.95
1902	1.35	1.00	.65	1.00
1903	1.35	1.30	.50	1.50
1904	1.45	1.30	.70	1.55
1905	1.45	1.00	.70	1.35
1906	1.50	.95	.75	1.45
1907	1.65	1.15	.80	1.60
1908	1.65	1.15	.70	1.60
1909	1.65	1.15	.60	1.35
1910	1.75	1.35	.80	1.65
1911	1.95	1.60	1.00	1.95
1912	1.95	1.40	.65	1.50
1913	1.95	1.15	.65	1.95
1914	1.95	1.45	.90	1.95
1915	1.90	1.50	.75	2.05
1916	1.90	1.50	.90	2.90
1917	2.90	2.35	1.65	3.15
1918	3.15	2.35	1.65	3.15
1919	3.15	3.35	1.65	3.15
1920	3.90	3.25	1.50	3.15
1921	3.15	2.35	1.10	3.15
1922	3.40	2.25	1.15	4.25
1923	4.00	2.25	1.25	4.00
1924	3.55	2.25	1.25	3.50
1925	3.60	3.50	1.45	3.75
1926	4.00	2.50	1.45	4.00*
1927	4.00	3.10	1.45	4.00*
1928	4.20	2.35	1.65	4.25
1929	4.50	2.65	1.65	3.25
1930	4.50	3.10	1.00	3.10
1931	3.75	2.35	.85	3.00
1932	2.75	1.45	.85	2.25
1933	3.40	1.75	1.20	2.75
1934	3.40	1.75	1.20	1.75
1935	3.25	2.30	1.00	2.75
1936	3.40	1.95	1.00	2.75
1937	3.60	2.50	1.25	.....

Source: *Calpack Annual*, 1934.
U. S. Bureau of Fisheries Document 1092.
Pacific Fisherman, Volume 36, No. 2.

* Flats.

and charts on the preceding pages, yet the shortcomings of attempting to measure demand without more basic data are immediately apparent. Consumers' demand is gauged by the general reaction to a price condition in the market. The price of canned salmon fluctuates sufficiently to move the available supply from the market, with the exception of a small inventory, before the canning operations are under way in some sections of the canning area.

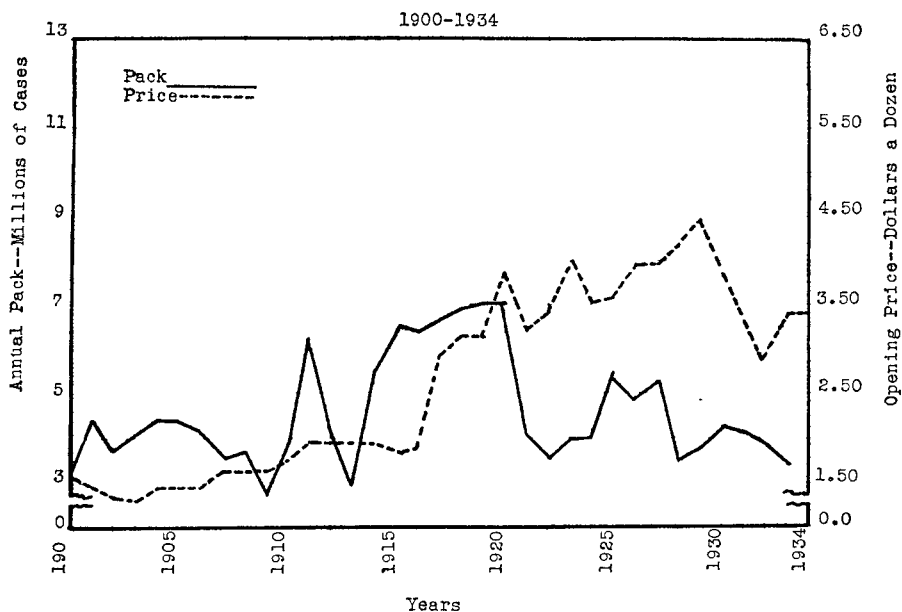


Chart III. Showing the trend of production of canned Chinook salmon and the annual opening price on No. 1 Flats.

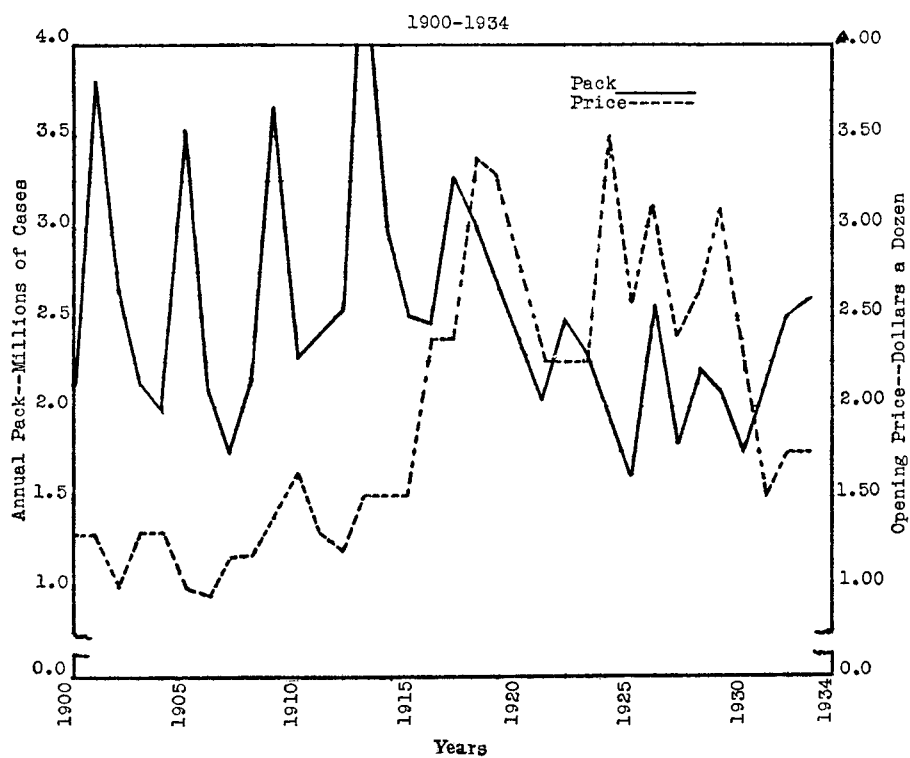


Chart IV. Showing the trend of production of canned Alaska Red and Sockeye salmon and the annual opening price on No. 1 Talls.

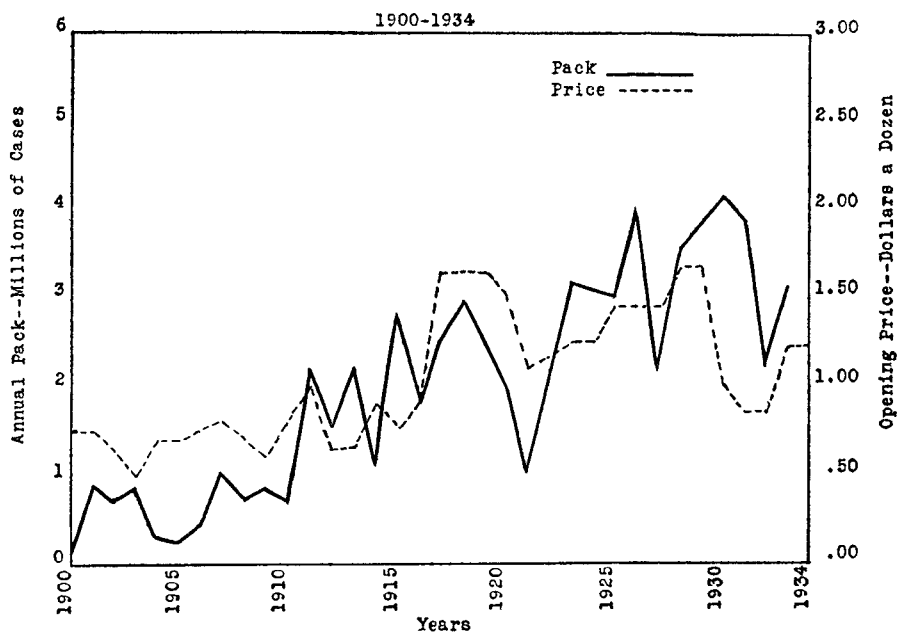


Chart V. Showing the trend of production of canned Pink salmon and the annual opening price on No. 1 Talls.

Table 17. CARRY-OVER OF CANNED SOCKEYE, ALASKA RED, CHINOOK, AND PINK SALMON, 1928 TO 1937.

Date	Sockeye	Alaska Red	Chinook	Pink
	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>
1928:				
July 1	9,024	241,290	2,197	122,922
1929:				
January 1	6,700	116,580	3,231	452,617
July 1	5,820	18,000	87	242,932
1930:				
January 1	28,593	77,156	9,863	1,154,587
July 1	20,415	54,643	10,430	809,359
1931:				
January 1	106,274	119,854	45,039	1,203,037
July 1	28,399	59,531	24,662	464,663
1932:				
January 1	47,972	574,070	89,347	1,767,295
July 1	43,502	348,928	57,374	1,082,799
1933:				
January 1	36,558	849,805	75,950	952,607
July 1	2,349	211,503	19,509	51,599
1934:				
January 1	60,819	1,183,308	52,414	1,125,179
July 1	9,466	380,384	24,748	278,563
1935:				
January 1	155,888	1,535,878	109,130	1,739,586
July 1	107,439	540,168	71,655	610,136
1936:				
January 1	100,306	400,857	64,514	2,002,332
July 1	51,912	150,298	24,894	480,236
1937:				
January 1	29,943	318,255	50,559	1,555,557
July 1	9,670	91,441	20,137	47,270

Source: *Pacific Fisherman*, Volume 32, No. 2, (1934); Volume 33, No. 2, (1935) p. 107a; Volume 36, No. 2, (1938) p. 102.

Such conditions as war, unemployment, fluctuations in the wages paid to large groups of workers, and a shortage of other protein foods seem to have a material bearing on the demand for canned salmon. The extent to which the increase in the demand for salmon and the corresponding increase in price is due to one or another of the many forces operating in the market, is difficult to say.

In the chart on page 104, an attempt has been made to show the trend in the price index of Alaska Red salmon in relation to the average annual indexes of employment and payroll totals in manufacturing industries from 1919 to 1934. On a whole, there appears to be some relationship. This relationship should not be considered as the determining factor in fixing the price on canned salmon, but merely as the trend of two factors which could easily have a distinct bearing on the price of a commodity of this character. Other forces of equal importance should first be taken into consideration before attempting to account for price changes.

ARTIFICIAL PRICE CONTROL BY LARGE COMPANIES

In the previous discussion, attention has been directed to the extent that large companies control the output of canned salmon. It seems only reasonable to return to this phase of the problem to look at it from another angle. Charges frequently have been made that one or two officials of certain large packing companies are able to set the prices on the various species of canned salmon at the opening of the selling season, and that smaller firms fall into line.²⁰⁶ The ability of any two firms to control the prices of canned salmon at the present time is problematical. There is sufficient reason to believe that control comes through informal deals with other large-scale producers, as several canners possess a supply of canned salmon large enough to demoralize the market. If one considers the charge of price control in the light of the supply and opening-price data given on the preceding pages, it would be easy to infer that, except in a few instances,²⁰⁷ some sort of artificial manipulation is a potent factor in price making.

Table 18. ANNUAL AVERAGE INDEXES FOR PAYROLLS, EMPLOYMENT, AND
CANNED SALMON (ALASKA RED), 1919 TO 1934.
(1922-25=100)

Year	Payroll Index	Employment Index	Canned Salmon Index
1919	97.4	107.8	115.0
1920	117.1	108.2	134.1
1921	76.2	82.3	109.3
1922	81.3	90.6	91.1
1923	103.3	104.1	89.9
1924	96.1	96.5	94.1
1925	100.6	99.4	116.1
1926	103.8	101.2	125.7
1927	101.8	98.9	108.4
1928	102.4	98.9	109.7
1929	109.1	104.8	102.5
1930	88.7	91.5	113.8
1931	67.5	77.4	107.7
1932	46.1	64.1	70.3
1933	48.5	69.0	60.9
1934	62.8*	79.3*	65.2*

* Average for 5 months.

Source: *Index of Wholesale Prices, 1919-1934*. Bureau of Labor Statistics. U. S. Department of Labor.

When unusually heavy salmon runs occur and large packs are made by all companies, the power of the larger companies to regulate prices is considerably weakened. Under conditions of an extreme oversupply, other factors seem much more important than the one discussed in the preceding paragraph.

²⁰⁶ The Federal Trade Commission Report, p. 49. *Op. cit.*

²⁰⁷ Illustrations: 1919-20 and 1932-33. See footnote 205 on page 100.

THE PRICE OF COMPETING PRODUCTS

Salmon in all of its forms is essentially a protein food. As such, it must be marketed as a substitute for certain protein-bearing foods common to the diet in the average household. Comparisons have been made elsewhere in this publication as to the food value of salmon and several other commodities, and in every case salmon made a very favorable showing.

Certain comparisons with respect to prices have been attempted in Chart VI. In its preparation, the average retail price of one-pound cans of Alaska Red (Sockeye) salmon was used to compare with equivalent weights of sirloin steak, pork chops, and leg of lamb. At the same time, the wholesale price of the canned salmon was inserted to give some idea of the margin between wholesale and retail prices. The data were compiled from the monthly reports of the Bureau of Labor over a period of 69 months from January 1929 to September 1934, and the wholesale prices were taken from the monthly prices quoted in the *Pacific Fisherman*.

The price-trend lines on all four commodities show a considerable inclination to move in the same direction. The importance that can be attached to the uniform drift of prices is a matter for conjecture. Officials of one of the largest packing companies follow the price movements on possible competing commodities very closely, with the idea of making the necessary adjustments in the prices of salmon. Seemingly, there is a direct price relationship between the lower-priced canned salmon and such commodities as corned beef (canned) and potted meats. Members of the industry have evinced a real interest in the increasing amount of canned dog food consumed by the negro population in the South and the poorer classes in large cities. It is believed that canned dog food enters into direct competition with some of the lower-priced canned salmon.

Table 19. COMPARATIVE RETAIL AND WHOLESALE PRICES.

Average retail prices of Alaska Red canned salmon, sirloin steak, pork chops, and leg of lamb, and the average wholesale prices on Alaska Red canned salmon in selected cities of the United States, by months, from 1929 to 1934.*

Year and Month	Alaska Red Retail	Canned Salmon Wholesale	Sirloin Steak	Pork Chops	Leg of Lamb
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
1929:					
January	31.9	21.	48.4	32.3	39.9
February	31.7	22.	47.8	33.0	40.3
March	31.4	23.	47.9	35.2	40.9
April	31.5	23.	49.0	37.1	41.8
May	31.3	23.	50.4	37.7	42.1
June	31.4	21.	51.2	37.6	41.2
July	31.5	22.	52.5	39.5	41.1
August	31.7	22.	52.4	40.4	40.3
September	31.8	22.	51.5	40.7	39.5
October	31.9	23.	50.3	38.9	38.5
November	31.9	23.	49.3	35.8	37.9
December	32.2	23.	48.9	34.3	37.9
1930:					
January	31.9	24.	49.0	35.3	39.1
February	31.9	24.	48.6	35.2	38.1
March	31.9	24.	48.4	36.1	36.6
April	31.8	24.5	48.3	37.1	35.8
May	31.8	24.5	48.3	36.1	35.9
June	31.8	24.	47.9	36.6	36.6
July	31.9	23.	46.3	36.5	35.7
August	32.6	25.5	44.6	36.7	33.7
September	33.5	25.5	45.0	39.1	34.0
October	34.0	25.5	44.5	37.9	32.8
November	34.3	25.5	43.3	32.8	31.4
December	34.3	25.5	42.9	31.4	31.1
1931:					
January	34.3	24.	42.5	29.8	31.4
February	34.3	24.	41.0	27.6	31.1
March	34.2	24.	40.3	29.4	31.0
April	34.0	23.5	40.0	29.7	31.3
May	33.8	23.5	39.5	30.1	31.2
June	33.6	23.	38.7	29.4	30.6
July	33.4	21.	39.2	31.8	30.0
August	32.9	20.	39.5	33.3	29.6
September	31.3	19.	39.4	32.2	28.8
October	30.3	19.	38.6	29.3	27.5
November	29.9	19.	37.3	25.0	26.1
December	29.6	18.5	36.3	21.8	24.9

* Unit of 1 pound on each commodity.

Source: U. S. Department of Labor, Bureau of Labor Statistics, Monthly Reports. *Pacific Fisherman*, 1930 to 1934.

Table 19. COMPARATIVE RETAIL AND WHOLESALE PRICES—Continued.

Year and Month	Alaska Red Retail	Canned Salmon Wholesale	Sirloin Steak	Pork Chops	Leg of Lamb
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
1932:					
January	29.4	19.5	34.9	20.9	24.1
February	28.9	19.0	33.2	19.1	23.7
March	28.5	19.0	33.0	21.5	24.9
April	28.1	17.33	33.4	21.5	25.6
May	26.9	15.5	33.0	19.9	25.0
June	25.8	15.0	32.8	19.7	24.3
July	24.6	14.0	35.3	25.5	24.9
August	21.8	11.5	34.9	23.3	24.0
September	20.6	11.5	34.4	23.8	23.4
October	20.0	12.0	33.1	21.5	22.1
November	19.6	12.0	31.4	20.2	21.3
December	19.5	12.0	29.9	17.6	21.0
1933:					
January	19.4	12.0	28.9	16.5	21.7
February	19.0	11.0	28.5	17.6	21.7
March	18.5	12.0	28.2	19.0	21.6
April	18.3	12.0	28.0	17.8	21.3
May	18.6	12.25	28.4	18.0	21.4
June	19.0	13.0	29.7	18.5	22.7
July	21.0	13.5	29.8	18.2	22.3
August	19.9	14.0	30.2	19.7	22.4
September	20.8	14.0	34.4	23.8	23.4
October	20.0	14.0	33.1	21.5	22.1
November	19.6	14.0	31.4	20.2	21.3
December	18.6	14.0	28.0	23.6	20.5
1934:					
January	20.9	14.8	28.1	20.0	21.5
February	21.2	14.6	28.5	23.7	24.3
March	21.1	14.3	28.8	24.6	24.7
April	21.3	14.3	29.6	23.7	25.2
May	21.3	14.7	31.3	24.1	27.7
June	21.3	14.9	32.0	24.5	27.2
July	21.5	14.4	32.9	25.5	26.2
August	21.4	13.7	32.9	25.8	24.7
September	21.4	13.9	34.8	32.4	25.5
October	21.3	14.2	33.2	27.0	24.0
November	20.9	14.0	28.8	22.2	21.2

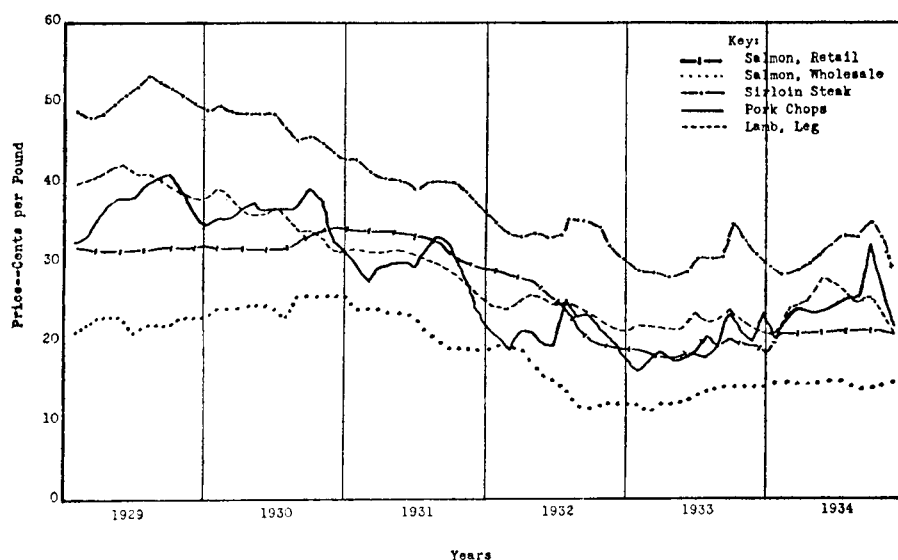


Chart VI. Average retail price of Alaska Red canned salmon, sirloin steak, pork chops, and lamb, and the average wholesale price on Alaska Red canned salmon in selected cities of the United States, by months, 1929 to 1934.

SUMMARY AND CONCLUSIONS

EARLY HISTORY OF THE INDUSTRY

In the salmon industry, the period preceding 1885 was characterized by the abundance of the supply of salmon, the unsatisfactory methods of preparing the fish for market, the poor transportation facilities, and an undeveloped demand for the commodity. The Hudson's Bay Company, which dominated the industry until the middle of the past century, found markets for cured salmon in Europe, South America, and the Orient. Following the introduction of canning in 1864, the next twenty years were given over to the establishment of markets for the new product and the improvement of the marketing technique. Increased production costs and larger capital outlays for investment and for operating purposes became general as the industry moved northward.

The rapid over-expansion of the salmon-canning business after 1878 culminated by 1900 in a series of business failures. Subsequent reorganization resulted in the consolidation of many of the companies. It was immediately preceding and following the opening of the century that such large producing companies as the Alaska Packers Association, the Columbia River Packers

Association, and the Pacific American Fisheries were organized. These were the first really definite moves toward the concentration of the ownership of salmon canneries.

SPECIES OF SALMON IMPORTANT. BASIS FOR DETERMINING USE AND GRADES

As salmon canning developed in Alaska and the Puget Sound district, the use of all species of salmon for canning purposes became general. Pink, Coho, and Chum salmon were canned in quantities comparable to Chinook and Sockeye. Since 1911, the pack of Pink salmon has at times exceeded that of any other species. The differentiation between the five species is important as it provides the only basis for standardization and grading now used by the industry. The several species are distinguished on the basis of certain characteristics such as appearance, color of flesh, texture, and nutritive qualities. Mild-curers restrict themselves to Chinook and Sockeye salmon. Other processors have accustomed themselves to the use of a given species and refuse all others. Both the courts and the industry recognize the species of salmon as a basis for grading.

STANDARDIZING AND GRADING

Inadequate standards of quality for canned salmon exist within the industry. The deficiencies in the grading arise from a lax inspection system and a failure of the industry to establish suitable standards for all canned salmon. Violations of the Pure Food and Drugs Act have been numerous. Ninety-four per cent of the offenses charged against the salmon packers were for adulteration and six per cent for misbranding. All states have laws pertaining to the subject, but the policy of state officials is to throw the burden of enforcement on the National Government. Since the Federal law relates to canned salmon entering interstate commerce, a serious gap exists in enforcement in intrastate trade.

The industry is now investigating the feasibility of establishing more rigid standards of quality. Such an investigation, to be of any value, must lead inevitably to a careful survey of cannery equipment and inspection facilities. Much of the present spoilage is due to unsatisfactory canning equipment and inadequate plant sanitation. The other contributing factors are a lack of dispatch in caring for the fresh fish and the method of handling before canning.

The authority of the Federal Government involving cases of adulteration and misbranding of canned salmon was strengthened considerably with the enactment of the Federal Food, Drugs, and Cosmetic Act (1938). The results to be obtained from the new law are open to question.

Legislation similar to the "Regulations for the Inspection and Classification of Canned Salmon Packed in British Columbia" should be instrumental in improving the quality of canned salmon in the United States. Likewise, Public Law 451, pertaining to the optional governmental inspection of fish canneries, should be applicable to all fish-canning industries. Bureaucratic administration and excessive administrative costs would be unlikely. The competitive advantage of one firm over another, in case the costs of administration were prorated on the basis of the number of cases packed, would be negligible. Competition with other commodities would have to be considered.

MAINTENANCE OF SUPPLY

Biologists have done much to assist the industry in a solution of its production problems. Through a series of studies made between 1885 and the present time, substantial agreement has been reached as to the spawning ages of the five species of salmon and other pertinent facts concerning the life cycle of each of the species. The work of the fishery biologists has resulted in one definite benefit to the industry; that is, a guide has been given to the industry and the Government for an intelligent policy of conservation. Other benefits will come as further experiments are completed. State and Federal legislation now governs the time allowed for salmon fishing and specifies the types of equipment permissible for the purpose. The restrictions imposed on the industry as a result of protective legislation have a definite relation to the supply of salmon placed on the market. While scientists have made tremendous progress toward a solution of the perplexing problem of the natural habits of the five species of salmon, their work is not complete. Fishermen and packers are forced to fall back on their own experience as a guide to their annual operations.

PRODUCTION AND RELATED PROBLEMS

The entire discussion in the chapter on production resolved itself into one of causal relations. The shortage of salmon in California, Oregon, and Washington was overcome through a diffusion of fishing and canning operations over a wider area. This expansion of the industry was made possible by the organization of large corporations with sufficient resources to establish and operate canneries in Central and Western Alaska. As the northward movement of the industry occurred, there was a corresponding growth in the size of canneries and operating companies. The expansion of packing concerns and chain stores into the salmon-packing business affected both the organization of the salmon industry and the methods of marketing.

The shift in the center of the industry to Alaska necessitated the use of imported labor for the duration of the canning season. The problems of hiring, housing, and feeding the laborers brought added responsibilities to the salmon packers. With respect to cannery workers, the industry in the past sometimes failed to fulfill its obligations to its employees. The responsibility of hiring, feeding, and paying the workers was frequently placed in the hands of labor contractors. As a result, employees were subject to the abuses inherent in a system where contract labor exists. In part, the Code was an effort to improve the position of the workers by eliminating the contract-labor system, fixing minimum wages and hours, and regulating working conditions. The functioning of labor operations led to the mechanization of the industry.

Approximately 95 per cent of the salmon canneries were found to be owned by corporations, with the other 5 per cent divided between partnerships and individual proprietorships. A definite correlation was found to exist between the number of canneries operated and the size of the salmon pack. While excess capacity proved to be a real problem within the industry, the members of the trade have done little to solve it. There is slight possibility of accurately measuring the excess capacity in the salmon-canning industry.

From an emphasis on the problems of production technique, the industry has now turned its attention to the problems of finance and the obtaining of markets.

THE MARKET FOR THE PRODUCT

The market for the canned salmon in the past seven years has been largely within the United States. Adverse economic conditions, together with tariff and trade restrictions have practically excluded the canned salmon from foreign markets. England constitutes the principal export market for the commodity. That market, however, is gradually being taken over by the Russian and Japanese salmon packers.

It is the consensus of opinion in the trade, and this is supported somewhat by statistical data concerning retail sales and per-capita income statistics by geographical areas, that the domestic market for a given species of canned salmon depends on the income level of the consuming groups. Thus we find Chinook, Alaska Red, Coho, Pink, and Chum salmon being sold in all sections of the country, but the species sold in greater abundance will vary from section to section depending on the general income level of the consumers within that area.

The absence of satisfactory information concerning the domestic market is particularly noticeable in the salmon industry. Through cooperation within

the trade and with governmental agencies, market research work could be done that would be of distinct advantage to the trade.

MARKETING METHODS

Selling agents and brokers, the traditional middlemen in the marketing of canned salmon, still maintain a relatively strong position as distributors of canned salmon. This is true despite changes that have taken place in the channels of marketing in the past twenty years. Readjustment in the marketing channels for canned salmon began to appear immediately following the World War. Historically, this movement expressed itself (1) through direct sales of canned salmon to chain stores and large retail buying groups, (2) through direct sales to wholesalers, and (3) through sales by the stores of the Atlantic-Pacific Tea Company, which also operates its own salmon canneries. Each of the above movements was instrumental in diminishing the importance of the packer-selling agent-wholesaler-retailer system which had long been dominant in the industry.

Trade controversies have arisen mainly out of trade practices and methods of competition attributable to the adjustments being made in the marketing channels. Admittedly, a similar readjustment for all canned foods was taking place simultaneously, so the underlying force behind this change was not within the industry, but on the outside. The general movement away from selling agency and broker distribution appears to have stopped in 1932. It remains to be seen whether this recovery on the part of the selling agents and brokers will be temporary or more or less permanent. As long as the small packing concerns remain in business, there will be a group of packers marketing through the two agencies mentioned.

Selling agents and brokers perform the two essential functions of financing and selling. Neither service can be dispensed with, nor is it possible under present conditions in the industry for the smaller canning companies to perform these functions for themselves. The continuation of the substitute methods of marketing adopted by many concerns is contingent on the economy secured through the method used. If the selling agencies that are merely sales departments were carefully segregated from the real selling agencies, there is no question that the trend in the marketing of canned salmon is definitely toward selling through sales departments. The Code for the industry was an attempt to solve many of the problems of marketing through the medium of uniform sales contracts, selling commissions, and label allowances. Although the Code is no longer effective, the industry as a whole has continued to be guided by a uniform program relating to marketing procedure similar to that outlined in the industry's code.

SALES PROMOTION

Favorable marketing conditions up to 1920 enabled the salmon canners to ignore the sales-promotion activities so generally used in American business. The small amount of advertising work carried on by salmon packers was usually confined to trade journals, intermittent appeals to the consumers in newspapers, and a wide use of brands and trademarks. The use of brands and trademarks for advertising purposes has always been of paramount importance to selling agents and brokers. Through long usage, many of the distributor's brands are more widely known than those of their principal. Brand consciousness on the part of salmon consumers is limited. Where canned salmon is one of a group of nationally advertised canned foods distributed by a given firm such as Libby, McNiell & Libby or the California Packing Corporation, the prestige of the advertised brand carries over to canned salmon. Prior to 1936 the cooperative advertising efforts undertaken by the salmon canners proved disappointing. In 1936 the industry launched a sales-promotion program of sizable proportions. The results were such as to encourage further effort along the same line. In 1937 the industry agreed to institute a three-year advertising program to be financed by an assessment on the members of the industry in proportion to the number of cases of salmon packed by each participant. The fund to be raised each season will be practically double that allowed for advertising in 1936. Several kinds of sales media will be employed to stimulate consumer demand.

PRICING

Salmon packers have long followed the practice of announcing an annual opening price on each species of canned salmon. Such announcements occur in July or August of each year. Historically, this opening-price announcement was of considerable importance. It formed the basis for fixing the price on future (sales subject to approval of the opening price) orders, and with very little change, the opening price constituted the price at which the salmon moved between packing seasons. Small packers generally fell in line after the larger concerns issued their price quotations. The price was presumably fixed at an amount that would move the available supply of canned salmon from the market between canning seasons. To accomplish the desired end, packers were forced to consider, among other factors, the size of the pack, the size of the carry-over (if any), the price of competing products, and consumers' purchasing power.

At present, the price on canned salmon is determined in the same manner as that of canned fruits and vegetables,²⁰⁸ that is, by the forces of supply and

²⁰⁸ Canned corn, peas, pears, and peaches, as well as many other fruits and vegetables.

demand operating in the market. Since 1920, sales subject to the approval of the opening prices have diminished in importance in proportion to the growth of the hand-to-mouth buying habits of the consumers. Wholesalers no longer place their orders in advance of the packing season, but they follow the policy of purchasing salmon as the need arises. Irregularity of demand on the part of the consumers has affected the purchasing policies of both the retailers and wholesalers. This, in turn, has kept the packers on the defensive. Prices are now changed from time to time to meet competition within the industry or with competing products.

A buyers' market has existed since 1931. Price cutting became general after that time, and by 1933 secret price cutting had become such a problem that an attempt was made to remedy the condition through the medium of the industry code. In the code adopted by the industry, no attempt was made to fix prices. The only purpose of the price provisions was to prevent secret price cutting. Quoted prices were to be made available to all members of the industry. Such quotations could be changed by any packer after notifying the Code Authority.

In an attempt to explain the fluctuations in the price of canned salmon, consideration was given to the interaction of supply, demand, and price. Supply was considered (1) from the standpoint of the actual amount of canned salmon available without any artificial restriction, and (2) from the standpoint of the actual supply under conditions where artificial control was present. The demand factors were deemed to be affected (1) by consumers' buying habits, (2) the amount of employment, (3) the size of the industrial payrolls, and (4) the price of competing commodities. The general analysis brought out these points:

1. Regardless of the supply of canned salmon, the species have always been priced from high to low in the following order: Chinook, Sockeye or Alaska Red, Coho, Pink, and Chum.

2. There is a general relationship between the supply of Chinook, Sockeye or Alaska Red, and Coho, and the price of each species. That relationship has not been so consistent with respect to Pink and Chum.

3. There has been a general upward trend in the price of all species of canned salmon in the period from 1900 to 1934.

4. The price of Pink salmon continued on an upward trend despite the increase in the supply available. This fact can be accounted for through an unusual expansion of the consuming market for the product.

5. War conditions were instrumental in broadening the market for canned salmon.

6. Monopolistic conditions were considered to be of some importance in establishing the price of canned salmon.

7. There is a definite tendency for the price of canned salmon to move upward or downward in unison with competing protein foods, such as fresh and cured meats.